

THE LOGISTICAL SUPPORT OF THE FRENCH FIRST
ARMY AUGUST 1944 - MAY 1945

Paul W. Turner

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by

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Like most writers in their acknowledgments, I have saved for last the recognition of the person nearest my heart. For me, this is my wife, Hea-Kyung. Not only did she type most of this work, but she patiently endured the life of a "thesis widow." At times it seemed that my struggle to complete this thesis resembled a long war. Now, like a homesick soldier at the end of an exhausting conflict, I return to her hopeful that my efforts were not in vain.



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Introduction

In the minds of many, the Allied ground soldier who liberated Western Europe during World War II was a man with a gun in his hand. With a burdensome pack on his back, he emerged from a landing craft off the coast of Normandy and waded through the shallow waters onto a smoky beach littered with barbed wire and invisible mines. With grenades and machine gun fire, he silenced the pillboxes and cleared the beaches. He then raced across France in a tank or truck in hot pursuit of the enemy. He held off the German tanks during the Battle of the Bulge and later stormed across the Rhine river. At the end of the war, the Allied soldier was to be found deep in central Germany face to face with his Russian comrade in arms.

But there was another Allied ground soldier. He carried a wrench, not a rifle. He drove a cargo truck, not a Sherman tank. He loaded railroad cars, not artillery pieces. And although he was not on the front line shooting at Germans, his contribution to victory equalled that of the ground combat soldier. This noncombatant soldier provided the logistical or service support for the armies at the front.

This thesis will examine the work of those Allied service troops and others who provided the logistical support for the French First Army. While no military historian denies the importance of logistics, it is often the dimly lit scenery of their works--the spotlight focused on the life and death struggle of the battle front. In keeping with the above tendency, the service support of the French First Army has received little attention.

Since this thesis shall be devoted to the "logistics" of an army, a brief discussion of that term is necessary. In its broadest sense, it encompasses a vast number of noncombatant activities, civilian as well as military, whose purpose is to supply an army with the men, products and services which will allow it to fight. By this definition, the research, development and production of a wide variety of goods (weapons, clothing, fuel, ammunition, etc.) carried out in a civilian economy by "armies" of workers would fall within the wide domain of logistics. Also by this definition the storage, distribution and repair of these items, carried out by mostly military personnel in the theater of operations, would be considered logistical support. The thesis will concentrate on the latter type of activity.

The job of distributing men and supplies entails the development of a transportation system in the communications zone. The repair and operation of roads, railroads and canals is central to logistics. An examination shall therefore be made of the work of the Transportation Corps and the Corps of Engineers in this regard. Other duties performed by service units include: the repair and maintenance of matériel and the evacuation of wounded from the combat zone.

One objective of this study is to show the impact of logistics on the combat operations of the French First Army and vice versa. It is not enough to say: "Due to a shortage of rolling stock, the First Army's ammunition requisition could only be partially satisfied." What remains unsaid is: How seriously did this ammunition shortage hamper combat operations? Did it force the First Army into a defensive posture? Questions such as these will be investigated.

The history of the French First Army, logistical or otherwise, offers another example of the problems and benefits of coalition warfare. The First Army fought in a military alliance using mostly American arms and supplies. It was also greatly dependent upon U.S. troops in order to meet its service support needs. Many of its soldiers were North African Muslims which entailed cultural differences. Their religion prohibited certain Western foods and they lacked experience with the products and procedures of a technologically advanced society (automobiles, radios, taking inventory, etc.). Few of the First Army's soldiers, French or Muslim, were able to communicate easily with their American comrades in arms. On account of its ethnic make-up and its large degree of contact with American troops, the French First Army presents an excellent study of the vicissitudes of alliance warfare.

Some French writers, notably General Charles de Gaulle, have charged that the Americans often slighted the First Army in their distribution of supplies. In an attempt to shed some light on this issue, the supply status of the French First Army shall be compared with that of the U.S. Seventh Army. This comparison will indicate whether the First Army received its "fair" share of supplies and services.

The thesis will be chronological for the most part. It will begin with the reorganization of the French North African Army during the period of American rearmament (1943-1944). Special attention will be given here to the formation of French service units. The story of the First Army's operations in Provence and rapid advance to the Vosges (August - September 1944) will be told emphasizing the supply work done on the beaches and the logistical difficulties of a blitzkrieg style campaign. The beginning of fall in 1944 heralded a five-month period of attritional

warfare in Alsace. During this period the thesis will examine the rehabilitation of port and rail facilities, the logistical effects of winter weather, the amalgamation of the Resistance into the First Army and the organization of the various Franco-American supply agencies which supported the French. The thesis will conclude with the buildup of supplies prior to the Rhine river crossing and the logistics of the subsequent advance through southwestern Germany.

This study hopes to provide an understanding of how the World War II logistical machine functioned using the French First Army as a case study. It will examine how service troops were organized and what tasks they performed in order to get supplies from theater ports of debarkation to the front. Furthermore, it will note how their organization and operations changed during the course of the campaign. Of secondary importance will be the story of Franco-American cooperation in supporting the First Army. The thesis will note how issues surrounding this support sometimes strained the military alliance of France and the United States which in spite of its problems was beneficial to both countries.

Chapter One

The Initial Equipping and Formation of the Supply Services of the French First Army (January 1943 - August 1944)

An extraordinary photograph from the Second World War shows two French soldiers surrendering during the German blitzkrieg in the West in 1940. Facing the presumably German cameraman, they are marching to his left with their hands raised. The distant, blurry faces do not betray any distinct features. But it is the expression on both these nondescript visages which makes this photo so remarkable, for neither man has chosen to greet his enemy captors with a grim determined defiance. No, far from it, they are smiling, laughing. Cowards, it seems. It is a most ignoble picture from a most ignoble period in French history.¹

From the diplomatic defeats of the 1930s to the military campaign lost in six short weeks, the French people offered a weak and decadent contrast to their more aggressive German neighbors. Although the British cut a sorry figure in these same events, they appeared to recover their fortitude in the subsequent Battle of Britain. Their "finest hour" mitigated their earlier pusillanimous performances on the battlefield and at the conference table. But for defeated and politically divided France, there was little opportunity to make up for the shameful blunders of the recent past; thus the image of a French army and nation lacking the courage to fight the Nazi menace became firmly fixed in the minds of many. Some formed the conclusion, as did U.S. Undersecretary of State Sumner Welles,

that the France of 1940 "was not the France of the heroic resistance of 1914 and 1918" whose army "gallantly defended every inch of the road to the Marne and which had stemmed the tide before the gates of Paris."² How apt the ancient Roman adage, sic transit gloria mundi, seemed in the spring of 1940.

Two years later in the summer of 1942, the United States had replaced France in the Western alliance against Germany, and the battle front had shifted to North Africa. In July the British and Americans agreed to strike at the Axis by invading Morocco and Algeria, Operation TORCH. Since Vichy French soldiers were stationed in this region, their reaction to the assault worried the Anglo-American High Command. If the French should stubbornly resist TORCH, the whole campaign might become bogged down, foiling the attempt to catch the Afrika Korps from the rear.³

In order to avoid a fight with a traditional ally, the United States entered into clandestine negotiations with a few influential Frenchmen. In these talks the Americans promised to reequip the North African Army for the war against les Boches in return for cooperation with TORCH. Anxious to avenge the humiliating defeat of 1940 and having little sympathy with the New Order in Europe, several French officers and civilians pledged their support for the planned invasion. From the American point of view, General Henri Giraud was the most important military leader offering his services to the Allied cause. He was tall and noble in bearing, and the Americans believed that he could rally the French Army in North Africa to his standard "simply by showing his hat," as Balzac said of Napoleon during the Hundred Days.⁴

General Giraud was a field commander. The rarefied air of staff discussions and planning stifled him; instead, the smoke and thunder of the

battlefield stimulated his senses. He possessed "a burning, never-slackening desire to fight the enemy anywhere and at any time." While his "offensive spirit" provoked only praise from American General Mark Clark, a British colleague judged him reckless: a modern-day Don Quixote who "would have ridden gallantly at any windmill regardless of consequences."⁵

On November 7, 1942, the day before TORCH was scheduled to begin, General Giraud met with then Lieutenant General Dwight Eisenhower for the first time at Gibraltar. In what Eisenhower would later call "one of my most distressing interviews of the war," Giraud dropped a bombshell which shook the rocky walls of the fortress headquarters. As the invasion fleet was nearing the African coast, the French Don Quixote insisted on throwing the ships in reverse and directing them northward to the southern coast of France for a surprise attack to be led by himself. It is doubtful whether his audacious plan could have surprised the Germans more than Eisenhower. At any rate, the American commander responded that along with other complications "the campaign on which we were embarking was backed up by such intricate and detailed maintenance [supply] arrangements that the change he proposed was completely impossible." But Giraud was always ready to improvise maintenance, and Eisenhower's arguments do not seem to have swayed him to abandon his position.⁶

In spite of Giraud's misgivings, the invasion proceeded as planned. The Allies speedily overran most of French North Africa and General Giraud became head of the over 300,000 servicemen which the former Vichy colonies offered. In January 1943 President Franklin Roosevelt and his top military advisors journeyed to Anfa, near Casablanca, where they met with the French general.

The extravagant use of men and matériel to provide every creature comfort to the participants at Anfa made a lasting impression on Giraud. His description of this kingly treatment, recorded later in his memoirs, is not without interest.

Each [villa, requisitioned temporarily by the Americans,] kept its personnel, reinforced by cooks, servants, drivers, telephone operators provided from U.S. personnel services. There was an incredible luxury of orderlies. At least one battalion maintained security. Each villa had its own guard post. . . . A special telephone network had been installed in order to connect every villa with the office buildings of the Conference. A phone book had been put in each villa. There was an automobile service, directed by the American Command, with an impressive number of cars. Hardly called, a car was at your door ready to take you anywhere. In short, installation very complete, with a great luxury of personnel and means à l'américaine.⁷

Giraud soon discovered the U.S. Army's policy on the logistical support of combat troops was also à l'américaine.

In these rich surroundings the Allied leaders discussed the rearming of Giraud's poorly equipped North African soldiers. The result of these talks was the Anfa Agreement. Briefly, it stated that "in principle" the United States would provide the French with enough modern equipment for eleven American styled divisions--three armored, eight infantry.

The evidence is not clear as to what arrangements, if any, were made at Anfa regarding who would provide the service support for the rearmed eleven divisions. The written agreement itself does not mention the question. An undated report from the French Army's supply office or G-4 offers perhaps a clue. Drafted one year later in 1944, it states that General Giraud believed the Americans had given "a verbal assurance that they would give us their aid in support and services and would themselves provide the Bases of Operation." The report, however, does not state

whether this promise was made at Anfa, as related in Charles de Gaulle's War Memoirs, or on some other occasion. It goes on to say that Giraud noted the Americans had at least clearly agreed "in principle" to the formation of eleven divisions. Did not that imply they would do everything necessary, such as supplying service support, in order to carry out their promise, short of actually providing the men for the divisions? Giraud apparently reasoned as such. Yet, it is a little puzzling why he would advance this somewhat tenuous argument of implicit American service support if he had been explicitly, though verbally, promised such support. In any case, the truth of what was said or not said regarding the matter remains unclear. But for the moment, in early 1943, the question of service support for the French divisions was an invisible distant cloud.⁸

The job of supervising the rearmament program was entrusted to the Joint Rearmament Committee. This committee, chaired and otherwise dominated by the Americans, formulated requisitions for equipment in liaison with the French High Command. These requisitions were submitted to both the United States War Department and the Combined Chiefs of Staff. After the requests journeyed through the weighty machinery of those two organizations, the approved arms were shipped from the New York Port of Embarkation. Upon arrival in North Africa, they passed under the control of the American theater commander, who throughout 1943 was General Eisenhower. At his discretion the equipment was finally turned over to the French. In practice, however, this transfer in the theater was usually automatic, especially after the French took over port operations at Casablanca by fall 1943.⁹

Equipment for the French arrived at a fitful rate. In the weeks following the Anfa Agreement, the French received only a trickle of

munitions. The United States sent a mere 2,500 tons during the first two months of the year.¹⁰

Part of the problem stemmed from a critical shortage of merchant shipping. Frequently in competition with others for this limited commodity, the French did not always fare well. One of their principal rivals was General Eisenhower. Anxious to bring his North African campaign to a successful conclusion, he argued in messages to Chief of Staff General George C. Marshall that "we cannot afford to displace supplies and equipment set up for our own forces."¹¹

The War Department generally supported Eisenhower's position and gave the French program a low priority. Further evidence of the widespread agreement on this point comes from the Bessell Committee. This committee was set up by the Army in early 1943 to study the various lend-lease programs, including French rearmament. Its members concluded that U.S. military needs should be met first; they therefore cautioned against increasing the flow of military aid to allies. Finally, another firm adherent to the "America first" point of view was Lieutenant General Brehon Somervell. Mention is made of his opinion since, as head of the Army Service Forces, he was arguably the most influential figure in the American supply system from the factory to the front.¹²

The French, meanwhile, were becoming noisily impatient to reequip their army. Giraud complained to Eisenhower, who in turn wrote Washington: "I have here to face the insinuation that we are not being straight-forward [sic], that we are long on promises and short on performance."¹³ Robert Murphy, Roosevelt's political representative in North Africa, was also feeling the heat. He wired the President that a significant quantity of arms be sent immediately.

These SOS's coming from the theater apparently stirred Washington to action. A special convoy, known as UGS 6 1/2, was readied to leave for North Africa in March. The ships docked there on April 14 with 125,000 tons of matériel on board. This delivery and others immediately following in its wake allowed the French to equip more than three infantry divisions. The rearmament program had taken a giant step toward the eleven-division goal staked out at Anfa.¹⁴

But this rapid rate of delivery slowed in the late spring and early summer of 1943. Although 135,000 tons of French supplies cleared U.S. ports in March, monthly shipments steadily dropped to a meager 6,000 in July.

One or possibly two events explain this decline. Preparations for the Allied invasion of Sicily aggravated the earlier difficulties of low priority and limited shipping. Political complications may have also played a role; General Charles de Gaulle, the bête noire of President Roosevelt and the U.S. State Department, appeared on the North African scene in late May. He soon began whittling away the authority of General Giraud. Alarmed at de Gaulle's growing power, Secretary of State Cordell Hull suggested curtailing arms shipments to the French.¹⁵

But Giraud was not ready to be pushed into oblivion. On June 22 the recently formed governing body for French affairs, the French Committee of National Liberation, recognized him as the Commander in Chief of all troops in North and West Africa. This decree soothed U.S. concern and prevented Hull's proposal from hardening into policy.¹⁶

In July Giraud visited the United States where he successfully rekindled the enthusiasm of its leaders for the rearmament program. Shortly afterwards, the War Department promulgated the 15 August Plan.

It looked forward to providing the remaining equipment to achieve the eleven-division objective of the Anfa Agreement by the end of the year. The 15 August Plan slightly altered the terms of Anfa; it increased the number of armored divisions from three to four while subtracting one infantry division from the original eight. This change was unimportant to the French; in fact, they had proposed it. The sine qua non from their viewpoint was that the total number of divisions (eleven) remain the same.¹⁷

In September the French could confidently look forward to the fulfillment of the Anfa Agreement. Cargo was arriving at Casablanca at a steady pace. Gone was the nagging shipping shortage, buried under an avalanche of supplies. By the end of the summer, the French had enough equipment for six divisions. Pleased with this growing might, Giraud sent General Marshall a message of thanks in which he vowed that "America will not regret" its efforts to resurrect the French Army. Revenge for 1940 was as near as the approaching new year.¹⁸

Shortly after Giraud sent his letter, Lieutenant General Roger Leyer, the French Army Chief of Staff, was working on one of his own. He was disturbed by the latest requisitions forwarded by the Joint Rearmament Committee to the War Department in Washington. He wrote the committee that the matériel requested in order to form more service units at the possible expense of some of the eleven divisions was "flatly rejected" by the French High Command. A second "shadow of Sedan" pressed heavily upon Leyer when he penned that urgent "considerations of a moral, psychological, and political nature, more than military" had compelled him and his colleagues to attach greater importance to the formation of combat divisions than to service units.¹⁹

General Leyer's letter, dated September 16, was the opening salvo of "la bataille des services". The general lines of this dispute quickly formed. The Americans maintained that their services, hard pressed already, were unable to support their ally in combat; therefore, the French Army must be self-sufficient in the logistical support provided by the services.²⁰

On the other side, French generals like Leyer and Giraud wanted to channel their limited African manpower into front-line combat divisions, not quartermaster labor battalions and truck companies. They wanted the United States to provide most of these kinds of units. While the Americans toiled in the rear, their army of fighters would advance victoriously against the enemy, making amends for the debacle of 1940 and restoring to France her honor and prestige. Since military accomplishments would be in proportion to the number of divisions raised, the French wanted as many as possible. These "moral, psychological and political" considerations did not, however, persuade the hardheaded Americans. They had little interest in helping their ally recapture some past grandeur and glory.²¹

The French consequently responded with new arguments. They reminded the Americans of the logistical support provided by France to General John Pershing's Expeditionary Force during the First World War. Should not the favor be returned? Furthermore, General Giraud's spokesmen claimed that a simple peasant army, like their own, did not require a vast array of service troops such as had been seen at the Casablanca Conference. There was, for example, no need of quartermaster laundry companies since their riflemen washed their own clothes in the field. These types of specialty units performing a narrow range of duties violated the spirit of improvisation prevalent in the French Army, known as système D. Finally, the fierce but technologically ignorant soldiers

from agrarian North and West Africa were not cut out to be automobile mechanics, radio repairmen and construction engineers. What "a pity," sighed General Giraud, "to waste excellent combat troops by converting them into service units in which duty they were poor."²²

Although the Americans sympathized with some of their ally's aspirations and arguments, their position remained unchanged: the French Army must provide the troops necessary for its own logistical support. As a corollary to this dictum, they pointed out that if the French could not find sufficient manpower in North Africa to form the service units necessary to maintain eleven divisions, then the number of divisions must be reduced regardless of any past agreement. Pressure was placed upon General Giraud and his associates to accept these American demands. Brigadier General Sidney Spalding, Chairman of the Joint Rearmament Committee, told General Alphonse Juin in October that Eisenhower might require the establishment of at least a semi-adequate number of service units prior to the employment of any French combat forces. The following month, the War Department suspended further shipments of military equipment to North Africa.²³

These blows, particularly the arms embargo, had a telling effect. Realizing their role in the war could be greatly curtailed, the French gradually yielded to the American demand of logistical self-sufficiency. By late November General Giraud had begun to surrender with the greatest reluctance. He argued, however, that American fears about a manpower shortage were unfounded: there were enough troops to fill the ranks of the eleven divisions and their required service units.²⁴

But the limited personnel resources of Africa, particularly in technicians, soon revealed Giraud's opinion on the feasibility of the

eleven-division program to be one of his "windmills." On January 6, 1944, the French Committee of National Defense, whose authority had surpassed Giraud's by this time, eliminated two divisions from the Army's order of battle. "This sacrifice," to quote one saddened general, "so painful to our morale, still did not appear sufficient to the Allied Command." Two weeks later, two more divisions were struck from the roll. These twin actions lowered the total number of divisions to eight, not seven since a twelfth division, which had been held outside of the rearmament program, was added in December. All but one of these eight divisions would later make up the French First Army. Simultaneously in January, the projected number of non-divisional units was upped to 245; many of these were service oriented. It was hoped the French would be able to reach this target figure with the help of their newly released manpower.²⁵

In early 1944 the Americans had seemingly won "la bataille des services." But the battle was to assume the character of a long war, because the French were never able to form the requisite number of service units. Their failure was due primarily to a shortage of skilled technicians and administrators. In addition, there was a persistent lack of interest in logistical matters on the part of generals like Giraud, confident perhaps in the belief that le train suivrait (the Supply Corps would follow and somehow fulfill its mission).²⁶

The Americans disappointed many in the French Army by their insistence on the amputation of four combat divisions. One disgruntled officer wrote:

The quasi-simultaneous dissolution of four divisions is an extremely important and particularly serious event for the French Army: the traditions of the old Army of Africa, the aspirations of the young French Army so impatient to fight, the hopes of the

entire nation to see its revived and numerous Army participate in the final combat seem to have been forgotten or betrayed.²⁷

The Americans had fallen short; and in spite of whatever military aid they had given, it did not seem enough. Later events perpetuated this feeling.

Besides the dispute over the composition of the French Army, two other difficulties troubled the rearmament program in late 1943. One concerned the quality of U.S. equipment; the other was the failure of the French logistical organization in North Africa to provide maintenance or replacement supplies for troops involved in combat in Italy. This last problem was not unrelated to the shortage of service units.

The Americans originally intended for North Africa to function as the immediate source of maintenance supplies for the French Expeditionary Force fighting on the Continent. Naturally the ultimate source was the United States, but North Africa was to be an entrepôt. Maintenance matériel to replace battle losses would travel from the United States to North Africa where it would be stored. It would later be sent across the Mediterranean upon request to the Expeditionary Force. The path along which these munitions would journey would be manned by French service troops except when crossing over water.

This arrangement fell apart during its first trial when the French Expeditionary Corps began arriving for combat in Italy in fall 1943. U.S. inspections at the time revealed that by American standards these forces had not received their full allotment of initial equipment. Further difficulties arose shortly thereafter when supply agencies in North Africa could not fill the requisitions coming from Italy. The French General Staff was also unable to estimate the munitions needed from the United States in order to maintain their troops fighting in the field.²⁸

A major source of these troubles was the chaotic state of the North African depot system. Since the French had not kept even a semi-accurate inventory of stocks, they did not know what they possessed or where it was located. Equipment became lost or damaged through improper shortage. When it proved impossible to locate items to satisfy requisitions, the French sometimes took them from the only source readily available: recently shipped supplies from the United States which were often intended to equip newly forming combat and service units. This expediency coupled with the diversion of U.S. supplies by the French to troops not included in the rearmament program set the stage for numerous initial equipment shortages. The sum total of these deleterious practices equaled mass confusion. One American supply officer concluded after the war that "the initial equipping of a foreign force with U.S. material should be made the responsibility of the foreign government concerned only when an adequate supply and service organization is available to the foreign government."²⁹

Presiding over this bedlam was General Giraud and the rest of the French High Command. From the American perspective, they were not sufficiently disturbed about their inefficient logistical organization. Their attention remained riveted on the fighting. When the Americans prodded them to establish a supply agency, SCAMA (Service Central des Approvisionnements et Matériels Américains), to sort out and inventory their stocks, French military authorities frequently assigned unskilled Arabs to carry out these duties. Many of these native Moslems did not speak French, much less English. They also earned a reputation among U.S. military personnel for thievery, poor discipline and a slow tempo of work that seemed timed to the leisurely plodding of their camels. "Arab labor,

though cheap, was scarcely worth hiring," was the general American opinion.³⁰

The failure of the North African supply system forced the U.S. Army to alter its original plan for maintaining French troops in Italy. In January 1944 the American Services of Supply in the North African Theater of Operations (SOS NATOUSA) assumed full responsibility for supporting the French Expeditionary Corps from U.S. theater stocks. The change meant that American service troops would handle almost all supplies to the Italian port of debarkation and, because the French had yet to activate a significant number of service units, from the port to the combat zone.³¹

Thus, in Italy, General Giraud's desire to see his soldiers used almost exclusively for fighting at the front was largely realized. But the Americans hoped that the inventory work of SCAMA and the growing number of North African service units would prevent the French from continuing to be a logistical liability by the time of the invasion of southern France, code named ANVIL.³²

A controversy over the quality of some of the rearmament equipment broke out in the fall of 1943. At that time, Major General Thomas B. Larkin--Commanding General, SOS NATOUSA--suggested that the French be given weapons in plentiful supply in theater depots so as to conserve shipping. But because many of these arms had recently become nonstandard in the U.S. Army, the French strenuously objected. The Americans, they argued, were violating the Anfa Agreement whose provisions plainly stated that they were to receive "the most modern matériel".³³

The protests of the French were usually in vain and they received some equipment of less than ideal quality. One of these was the M3A3 light

tank; it was being replaced in the U.S. Army during 1943 with the newer M5A1. Other tanks which were standard at the time--such as the medium M4A2 and M4A4, each mounting a 75-mm gun--continued to be issued to the French as late as 1945 when they were fast disappearing from American armored divisions. While French tanks were not greatly inferior to those used by the Americans, this difference placed them on further unequal terms when they had to duel the behemoths of the German Army whose guns and armor were superior to even the best in the Allied arsenal.³⁴

Another area where the French lagged behind was in the weaponry supplied to their infantry. The problem was not only quality but also diversity. Although they had some of the modern M1 carbines, they were not equipped with the efficient M1 rifle. Instead, the older M1917 Enfield and to a lesser extent the M1903 Springfield constituted the bulk of their small arms. There were also some rifles of French design scattered throughout the Army. The age and multiplicity of these arms created maintenance, spare parts and ammunition supply problems. Attempts by the French to obtain newer rifles and tanks after the completion of the North African rearmament program in mid-1944 were unsuccessful for the most part.³⁵

As the shocks and aftershocks produced by the friction over substitute weapons, service units and the North African depot system subsided--the Americans made plans during the first quarter of 1944 for lifting the November arms embargo. The French already possessed most of what was necessary to equip their eight divisions. They lacked, however, the matériel for about eighty combat and service support units. In March the Combined Chiefs of Staff approved the assignment of these items, and the

French had received them by the first of August, two weeks before ANVIL. The receipt of this equipment effectively ended the North African rearmament program.³⁶

These final deliveries, however, did not lead to the formation of all the support units for which the matériel was intended. At the end of June, six weeks from the start of ANVIL, the French were still short approximately forty service units. They simply could not find enough technicians to overcome the huge initial deficit of such personnel in the North African Army. Some of the men in the activated units were ill prepared for the coming job. The causes for this state of unreadiness were numerous: the civilian lifestyles of the North African soldiers did not develop service-related skills and there was not enough time to convert farmers and nomads into satisfactory mechanics and warehousemen; equipment shortages fostered lack of familiarity with certain items; the French High Command did not take full advantage of the training programs offered by the Americans; and language differences prevented the easy use of instruction manuals. In addition, battlefield victories in Italy, while salving the pride wounded four years earlier, drained the already limited manpower, adding another barrier to a logistically self-sufficient force.³⁷

Nevertheless, during the spring and summer of 1944 the French made some notable progress. Service troops operating with the Expeditionary Corps in Italy gained valuable experience. They later provided a fairly solid cadre of men for the First Army. With regard to quantity, a comparison of the number of men in the division and its support units--known as the "divisional slice"--of the forces in Italy with those projected for the invasion of France shows a growing improvement. In May, when there were four divisions in General Juin's Corps, French effectives

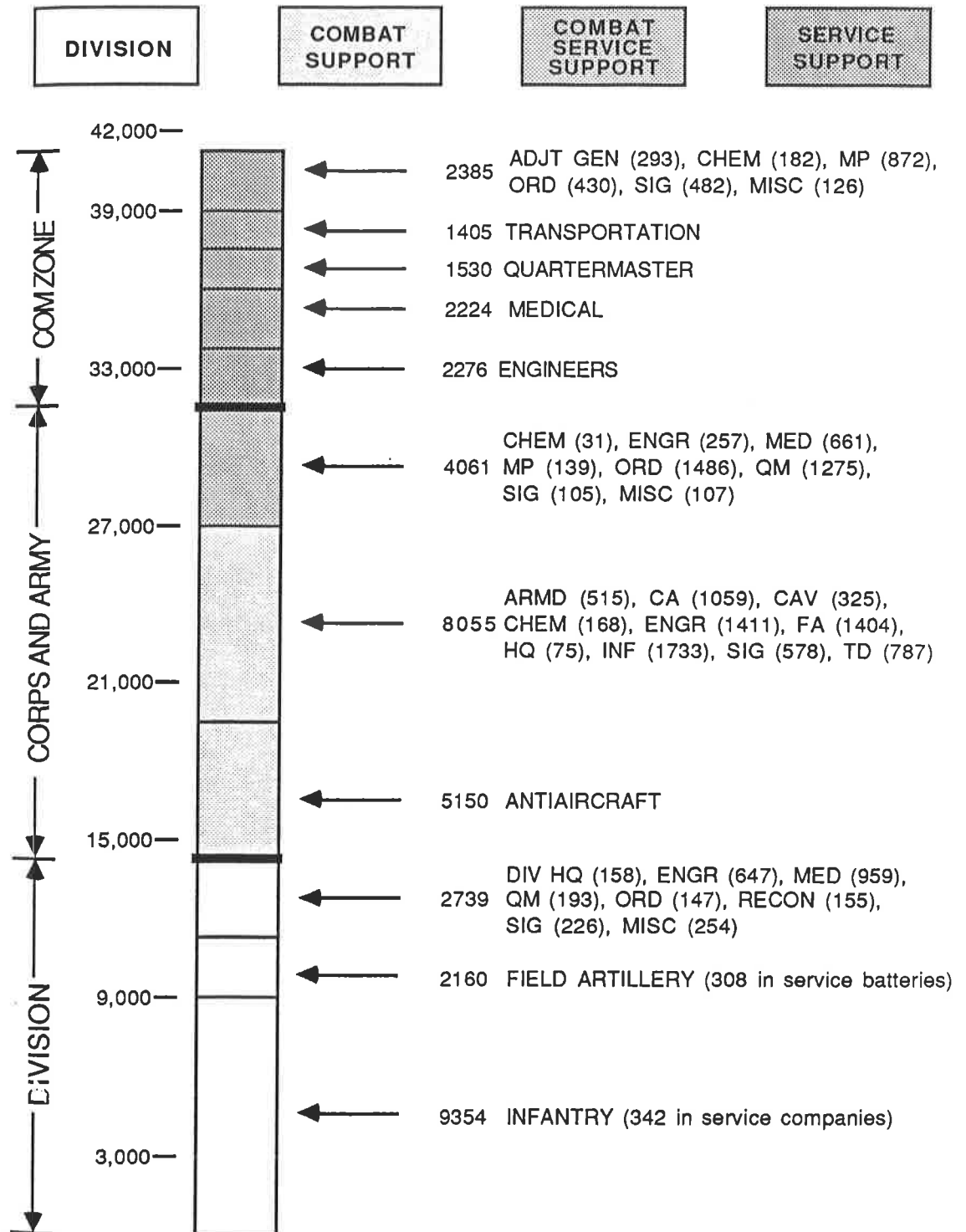
on the Italian peninsula totaled roughly 105,000 making for a divisional slice of slightly more than 26,000 men. At the end of June, the seven divisions earmarked for ANVIL, which together would constitute the First Army, and the one destined for OVERLORD in Normandy showed a divisional slice of 32,500. This number was, however, still less than the 40,000 or so soldiers customarily found in the U.S. Army. Thus, from the American point of view, the French lacked 60,000 support troops. This shortage can be better understood by a more detailed examination of the divisional slice.³⁸

Chart 1 on the following page shows a possible divisional slice for an infantry division in the U.S. Army in 1943. As can be seen, there were about 14,500 men in the division itself. The primary duty of most of these front-line soldiers was of course combat. With their rifles, grenades and artillery pieces, they delivered a lot of the army's firepower and in return received most of the enemy's as well. Yet, even the division contained troops who were less concerned with killing Germans than providing food, gasoline or medical care.³⁹

Behind or at the side of the division stood corps and army personnel lending it their support. This aid was of two types. One was termed "combat support," the other "combat service support." Combat support refers to those troops who mostly supplemented the firepower of the divisions (for example, infantry reinforcements, field artillery, tank destroyers, antiaircraft battalions). On the other hand, quartermaster, medical, ordnance and other service units operating at the corps or army level performed combat service support as they distributed supplies and tended to other duties in the battle zone. The Chemical Warfare Service, Corps of Engineers and Signal Corps carried out both combat and logistical

Chart 1: Divisional Slice For A 1943 U.S. Infantry Division

(ALL FIGURES ARE IN NUMBERS OF MEN)



functions, sometimes blurring the distinction between the two. While construction of a quasi-permanent bridge by engineers to an army depot was usually called combat service support, a pontoon bridge hastily thrown across a river in the heat of battle had a greater combat support character.⁴⁰

Although the composition of a division was rigidly defined, hence, fairly uniform throughout the U.S. Army, the same cannot be said about the corps and army troops in support of a division. This variation was due in part to the differing number of divisions which might be assigned to a corps or army. In addition, military authorities frequently tinkered with the proportions of the various arms and services in an army like cooks in search of just the right amount of ingredients for a recipe. For example, Chart 1 shows that a 1943 infantry division was protected from enemy air attacks by 5,000 antiaircraft troops. Later, as the war progressed and the power of the Luftwaffe shrank, the number of AA units per divisions declined as did combat support in general. Meanwhile, combat service support rose. By 1945, in the European theater, some placed the desired number of soldiers at the corps and army echelons at about 14,500 with 6,500 doing combat support and 8,000 combat service support. Though these figures differ significantly from those given in the chart, this variance is attributable to dissimilar methods of classifying military units as well to the aforementioned trend away from combat support to greater combat service support. In any case, both place the total number of corps and army soldiers per division at roughly 15,000, which is a figure often given.⁴¹

To the rear of the army lay the communications zone. The 10,000 men on this end of the divisional slice concentrated on supply like those at the

other end on combat. Since their duties were similar to those of combat service support, yet were far removed from any fighting, they were called strictly "service support." As in the army and corps, there was not a standard table of communications zone units to support a division; thus, the figure cited above of 10,000 is a rough approximation.⁴²

With the divisional slice in mind, it can be said that French military leaders built their North African Army starting at the division and gradually, reluctantly worked their way toward the communications zone. As might be expected from generals anxious to fight, their divisions and combat support units were well organized and trained, comparing favorably with their American counterparts; there was, however, a shortage of field artillery, antiaircraft battalions, and tank battalions. The combat service support of the French divisional slice lagged somewhat behind that of the U.S. Army in number and further back in quality. Limited time and manpower prohibited completion of the fourth and final section of the divisional slice: service support. It became a stub, having only about 2,250 B-quality service troops for each division in December 1944.⁴³

Most of the noncombatant soldiers in the corps, army or communications zone belonged to one of eight services in the French Army, seven in the U.S. Army. The eight, with the American equivalent in parentheses, were as follows: le Génie (Engineers), les Transmissions (Signal), le Train (the highway service of the Quartermaster), la Santé (Medical), l'Intendance (the food and clothing responsibilities of the Quartermaster), le Matériel (Ordnance), les Essences (the petrol department of the Quartermaster and Engineers, sometimes known as POL), and the cryptically named Service Z (Chemical Warfare). Accustomed to relying on the government controlled SNCF (Société Nationale des Chemins

de fer Français) for the operation of trains, the French had no equivalent to the Military Railway Service of the U.S. Transportation Corps.⁴⁴

Each of these services was responsible for a separate part of the logistical process. The Engineers repaired and constructed roads, railroads, bridges, pipelines and ports to facilitate the movement of troops and supplies. The Signal Corps operated as well as distributed and repaired radios, telephones, field wire and other communications equipment. For the transport of men and matériel, the French Service du Train operated what would be called in the U.S. Army quartermaster truck companies. The sick and wounded were cared for and evacuated by the Medical Service. The storage and distribution of food and clothing were the domain of la direction de l'Intendance or the office of the Quartermaster. Ordnance had the weighty responsibility of supplying or repairing weapons, vehicles and ammunition. Satisfying the mechanized army's thirst for gasoline was the task of either the American Quartermaster Corps or the French Service des Essences. The Chemical Warfare Service looked after the equipment used in launching and defending against gas attacks, such as gas masks and 4.2" mortars which found a use in the war as a highly prized close support weapon when firing shells filled with high explosives instead of vesicants. Smoke generators and pots--whose billowing clouds of fume concealed vulnerable military targets, such as river crossings--were also issued and operated by chemical warfare troops.⁴⁵

In the communications zone, the commanding general of either the base, intermediate or advance section coordinated the numerous operations of the services. This supervisory job at the army level and below was

entrusted to the assistant chief of staff, G-4, who also kept the unit commander apprised of the supply status of the forces under his control.

In their situation reports U.S. supply officers often divided the numerous items which they handled into five classes. All the various types of food rations, fuel and ammunition were known as Classes I, III and V respectively. Because of their heavy consumption and critical need during military operations, they were sometimes called the "staples" of combat. Supply Classes II and IV were usually lumped together and referred to equipment, clothing and materials. The dividing-line between these two was that tables of equipment usually specified the amount of Class II items to be received by a military unit (radios, tanks, trucks, rifles, etc.) while there was no set allowance for Class IV (fork lifts, weapon covers, medals, etc.).⁴⁶

Like supplies, the services usually classified the repair work they performed into five different classes or echelons. Preventive maintenance and light repairs made up first and second echelon duties; combat or service troops organic to the unit using the matériel usually carried out this work. Combat service support units in the army and corps carried out many of the more difficult jobs at the third and fourth echelons. One step further up the ladder and away from the battle front was fifth echelon maintenance; it involved the complete overhaul and reconditioning of equipment by service troops in the communications zone. Among the services, Ordnance had the greatest repair load since it was charged with the upkeep of the Army's numerous weapons and vehicles.⁴⁷

As the date for ANVIL approached, the Americans surveyed the logistical structure of the French Army, trying to gauge its strength. Could it stand on its own? Or would American buttresses be needed again

as in Italy? The Americans concluded that without their aid the sheer weight of the supplies to be handled, the vast number of labors to be performed would crush and overwhelm the underdeveloped French services. On June 14, 1944, Chief of Staff Marshall sent a policy directive on the subject to Lieutenant General Jacob L. Devers, the top U.S. commander in the Mediterranean theater. Marshall wrote that U.S. service units could be used "in indirect support of French combat organizations, but only when such organizations are employed together with U.S. combat troops in operations under U.S. command, and when such support was incidental to the major mission of supporting U.S. combat units."⁴⁸

By his use of so many qualifying conditions, it was apparent that Marshall was being dragged into approving the use of American troops to help the French support their own army. It remains to be seen how this mixed marriage behind the combat zone worked out. In any case, the earlier hope of a logistically self-sufficient French army was dead.

Chapter Two
ANVIL-DRAGOON: Beach and Blitzkrieg Supply
(August - September 1944)

When carrying out defensive operations, the commander of the weaker army should try to prevent his opponent from obtaining a decisive advantage at any location. This strategy is ideally accomplished by positioning defense forces in such a way that the ratio of the military strength of the two antagonists along the entire front line is equal to that found on any isolated segment. In other words, wherever the attacker is strong or weak, the defender should be proportionately the same.

On the other side of the battle line, the commander of the stronger army on the offensive has other methods, in addition to simply moving and concentrating his forces, by which he may attempt to overwhelm a defensive position. He might launch a minor attack prior to and away from where the main blow is to be struck. This stratagem, if successful, causes the enemy to reinforce the sector resisting the obvious threat by denuding the area targeted for the greater and yet unseen assault.

This ruse whereby the defender is maneuvered out of position was the purpose behind the proposal at the Tehran Conference in November 1943 to invade southern France (ANVIL) about one month before the main assault in Normandy (OVERLORD). The Anglo-American High Command, however, came to fear the possibility of the Germans concentrating and annihilating this isolated pocket. The Allies therefore prudently decided to launch both

ANVIL and OVERLORD at the same time, preventing the Wehrmacht from massing against one or the other.¹

But ANVIL was threatened in early 1944 with an abortive fate. The increase in OVERLORD from a three to a five-division assault plus the need to supply the isolated beachhead at Anzio did not leave enough landing craft for a simultaneous D-Day in Normandy and Provence. The British, meanwhile, believed that greater military and political capital would accrue to the Western Allies by the continuation of a strong Italian campaign. They therefore opposed siphoning seven divisions from Italy for ANVIL.²

Nevertheless, the Americans remained firmly committed to the attack against southern France. From a tactical point of view, they believed it would more directly aid OVERLORD than a distant campaign up the rugged, narrow Italian peninsula. The Allies, they argued, would also derive enormous logistical benefits from the capture of Toulon and Marseilles. Through these two ports in the south along with those in the north could pass the abundant and mostly untapped resources of the Western Allies in men and matériel. Once the full weight of the United States, Great Britain and to a lesser extent France were brought to bear on a broad front against a Germany already gravely weakened by losses and commitments in the East, then even the most skillful defense by the Wehrmacht would only delay unavoidable defeat.³

The Americans won the debate on ANVIL, later renamed DRAGOON. But the landing craft shortage delayed the invasion until more than two months after D-Day in Normandy. This postponement switched the sequence of the two operations as suggested at Tehran. Instead of DRAGOON diverting enemy forces from an impending OVERLORD, the reverse would now occur.

A soft underbelly in southern France was prepared for the Allies with tactical and logistical implications.

To lead the attack set for August 15, 1944, the Americans assigned three of their own infantry divisions--the 3rd, the 36th and the 45th. Each had experience in amphibious operations in the Mediterranean. Together with support troops, they formed both the VI Corps and the Seventh Army. In addition, British and American paratroopers of the 1st Airborne Task Force would help secure the beachhead. Following behind the Seventh Army would be Coastal Base Section (CBS). It was to assume control of U.S. logistical operations in the communications zone with the berthing of the first convoy at either Toulon or Marseilles.⁴

The French component of the ANVIL-DRAGOON troop list numbered 238,000 men. All participating units belonged to the North African rearmament program, and they were scheduled to land on shore between D-Day and D+65 of the invasion. The French invasion force comprised two armored divisions--1st DB (Division Blindée) and 5th DB--and five infantry divisions--1st DMI (Division Motorisée d'Infanterie), 2nd DIM (Division d'Infanterie Marocaine), 3rd DIA (Division d'Infanterie Algérienne), 4th DMM (Division Marocaine de Montagne), and 9th DIC (Division Infanterie Coloniale). Combat and combat service support would be provided by troops organic to the I and II Corps and Armée B, the name for the First Army during the opening weeks of the campaign. These forces, led by General Jean de Lattre de Tassigny, would initially be under the operational control of Lieutenant General Alexander Patch, Commanding General, U.S. Seventh Army. From the rear, Base 901 was to offer as early as possible whatever logistical support its meager means allowed.⁵

In the light of later events, Allied planners were quite pessimistic concerning the speed with which the Franco-American armies would advance in southern France. The hard fighting at Anzio and Cassino had caused the Allies to overestimate the strength of the German Army. The snail-paced progress of OVERLORD in its early stages had done nothing to discredit this faulty assessment. Expecting similar unspectacular results from DRAGOON, Seventh Army planners estimated that Toulon and Marseilles would not fall until about D+20 and D+40 respectively. Afterwards, French and American forces would wearily slug their way up the Rhône River Valley and reach Lyon, according to the Seventh Army's Report of Operations, on D+150. With such a slow-moving timetable, DRAGOON offered little tactical improvement over Italy, making British arguments against the project at the time more understandable.⁶

While both the French and the Americans had important combat duties in the coming attack, in the area of logistics the latter clearly dominated. The U.S. Seventh Army would supervise, and in some cases perform, most of Armée B's supply work until D+60. During this period the French were to draw most of their supplies for their advance depots or immediate consumption from Seventh Army stocks.⁷

In the initial period of the invasion, when a communications zone would not be in existence, service support would be the responsibility of the Seventh Army. Eventually Coastal Base Section (CBS) and Base 901 would inherit this job, each looking after the needs of its own national Army. Realizing, however, that the French were not equal to the task, the Americans on August 4 partially merged the two bases. Under this arrangement the Commanding General of Base 901, Brigadier General Jean Gross, and the chiefs of his general and special staffs became deputies to

their American opposites in CBS. More importantly, when CBS deemed it necessary, U.S. service troops could now step in and help the French support Armée B in order to equalize its supply status with that of the Seventh Army. The conditions whereby such aid could be rendered to the French, as spelled out earlier by Marshall in his note to Devers (see chapter one, page 27), had all been met: Armée B would fight with and under the tactical control of the U.S. Seventh Army while CBS would provide logistical services to the Americans first and the French second.⁸

An inherent feature of every World War II amphibious invasion was the supply work performed on the beaches pending the capture and rehabilitation of a seaport. In this logistical activity for DRAGOON the Americans would once again play the leading role, giving nearly a solo performance. They were largely responsible for moving over the beaches the 367,000 men, 56,050 vehicles and 277,700 tons of maintenance supplies, mostly expendables, scheduled to arrive by D+30.⁹

To ease the burden of service personnel operating in the danger and confusion of the beachhead, all of their work that could be done prior to the assault was carried out. Accordingly, troops landed with enough supplies to make them self-sufficient for the first couple of days. Before the French Army went ashore, for example, soldiers of European extraction were given one D and one K ration, enough food for two days; their Moslem comrades in arms received D and porkless C. Since Allied planes dominated the skies, it was ordered that gasoline supply trucks be loaded to 90% capacity and the tanks of all vehicles completely filled. Furthermore, much of the fuel arriving at the beaches in the early part of DRAGOON came prepackaged in five-gallon jerricans; this procedure avoided the lengthy decanting from bulk storage containers to retail ones easier to manipulate.

By the time the combat forces began making demands on service units, the battle front had advanced beyond the beaches with supplies segregated and sufficiently stocked in dumps.¹⁰

Anticipating the consumption rates of various expendables before a campaign like DRAGOON required the skills of a mathematician and a clairvoyant. The number of food rations needed could be calculated once the number of troops participating in the operation was known. The relative facility with which ration needs could be foreseen explains in part why Class I was, in the words of one authority, "probably the best-handled category of Quartermaster supplies on the European continent."¹¹ Nevertheless, a greater than expected influx of prisoners occasionally upset the level set for this stably consumed commodity.

Petrol and ammunition were more difficult to estimate than food. Terrain directly affected the former (hilly or muddy land increasing the fuel consumption of vehicles) and weather the latter (fog or blinding snow making artillery observation difficult, thus increasing expenditure in order to compensate for inaccuracy). But the nature of combat operations--which could not always be predicted--most dramatically influenced both. A rapid advance or retreat led to an increase in the amount of gasoline burned but a decrease in shells fired. On the other hand, in a static battle of attrition, ammunition became the more critical item. Interestingly, a French supply officer noted after the war that the total consumption in weight of both items "remains roughly constant whatever the physiognomy of the combat might be." (See Table No. 1 on page 34.)¹²

Since the Allies expected a slow moving, bitterly contested DRAGOON, more ammunition than gasoline was scheduled to arrive on the beaches of

TABLE NO. 1

Maintenance Requirements per Divisional Slice in the Combat Zone

Supply Classes	Normal Combat		Rapid Advance	
	U.S. 12th A. GR Oct-Nov 1944	SHAEF's est. 1944	U.S. 12th A. GR Mar-Apr 1945	SHAEF's est. 1944
I (food and forage)	78 LT	100 LT	86 LT	100 LT
II-IV (clothing, equipt and materials)	185 LT	117 LT	90 LT	117 LT
III (fuel)	144 LT	144 LT	180 LT	180 LT
V (ammunition)	153 LT	180 LT	100 LT	65 LT
TOTAL	560 LT	541 LT	456 LT	462 LT

*In 1944 SHAEF estimated the maintenance requirements per divisional slice in the communications zone to be 201 LT during normal combat and 231 LT during a rapid advance. Source: Logistical Support of the Armies, General Board Report 122.

southern France. A postwar report of the U.S. Army's General Board states that as much as "one half of the ship tonnage [was] allotted . . . for Ordnance Class V items."¹³ The initial D-Day convoy would carry five units of fire for the assault force. (One unit of fire approximately equaled the ammunition required by a military unit for one day of intense combat or three days of normal fighting.) This convoy and those following had five days in which to be discharged. The D+5 ships were to bring more troops with five units of fire for themselves and three-and-one-third for those already ashore. On D+10 a new wave of soldiers would begin disembarking with another five units of fire and one-and-two-thirds for those previously landed. A pattern begun on D+5 was now repeated on D+15 as every five days until D+30 reinforcements arrived with five units of fire for themselves and either three-and-one-third (on D+5, +15, +25) or one-and-two-thirds (on D+10, +20, +30) for their comrades already

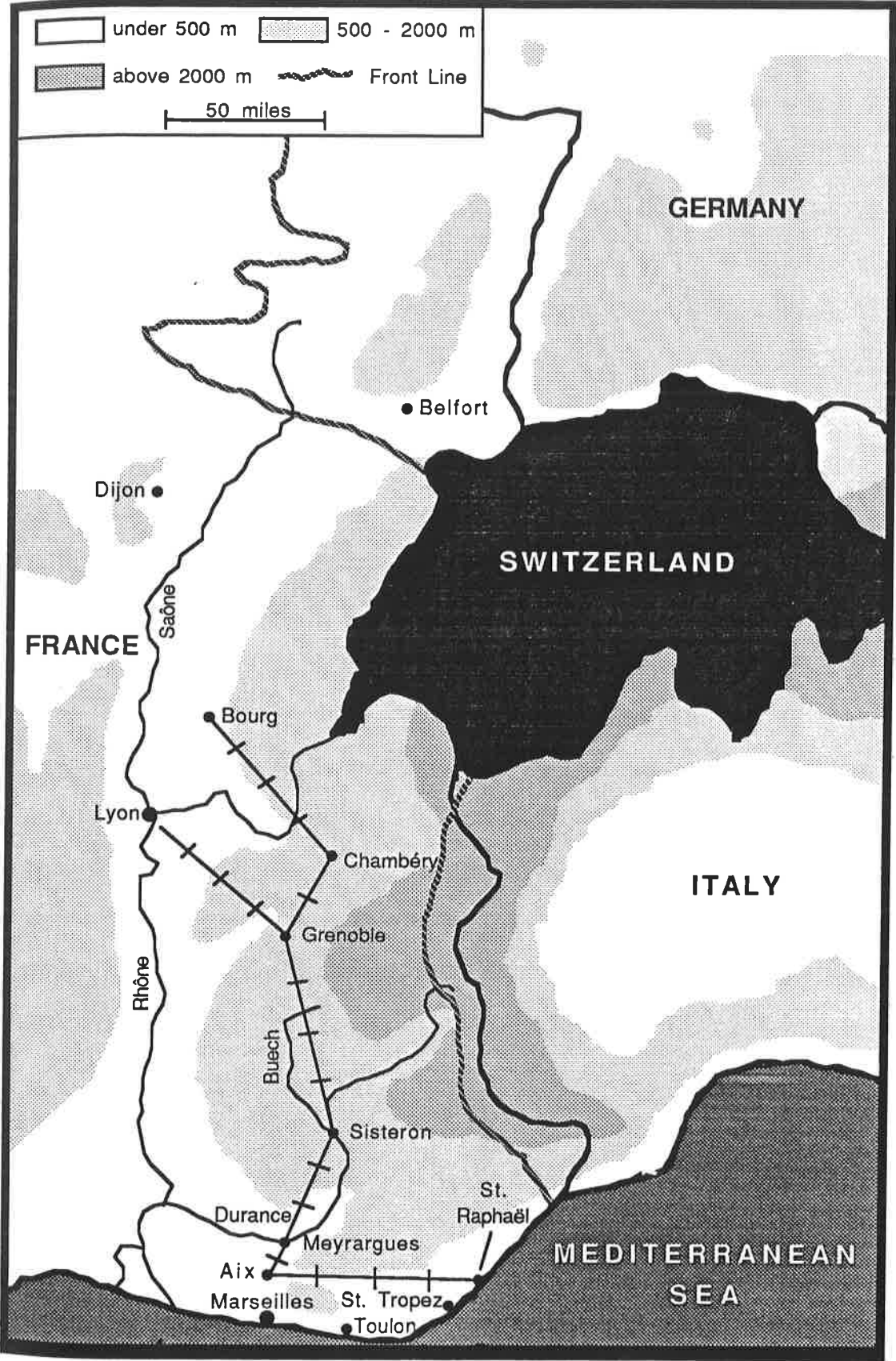
engaged in battle. It was hoped that this schedule would not only maintain ongoing combat operations but also lead to the build up of a comfortable reserve.

The Americans did not remain blind to the possibility that DRAGOON's tactical development might be different than expected. They wisely sought to introduce a certain flexibility to their otherwise iron schedule for the delivery of men and supplies. For this purpose Seventh Army established Near Shore Control to monitor and regulate convoy traffic departing from bases in Italy, North Africa and Corsica for southern France. Its ability to alter shipments in a timely manner was, however, limited. It took about two-and-a-half weeks to effect a change once a decision had been made. In spite of this drawback, Near Shore Control would have an important role to play.¹⁴

The invasion of southern France began early on the morning of August 15. Landing in the region of St. Tropez and St. Raphaël, the three American divisions in the van encountered little resistance. (See Map 1 on page 36.) In a week they were chasing the Germans northward through the French Alps. Tactical progress was so rapid that on August 22 American units entered Grenoble, almost 140 miles from the coast and two thirds of the way to Lyon.¹⁵

The French began arriving on the beaches in force on D+1 and assembled for a westward thrust towards Toulon and Marseilles. One of the first ashore was Rear Admiral André Lemonnier. In good humor he watched many of his excited countrymen "leap around like madmen" as they first touched, and in some cases kissed, the sands of la patrie. Lemonnier observed a difference in the manner in which the two allies unloaded their equipment and supplies from the landing craft: "The French distinguish

Map 1: Eastern France September 12, 1944



themselves by their noisy agitation, while the Americans operate methodically, no shouting, no barking of orders One does not know which to admire more: the ardor, the enthusiasm, the virtuosity of the French, or the truly extraordinary technique of the American crews."¹⁶ During the war the French often approached tasks with greater emotional verve than the Americans; this difference played a major role in provoking the dispute, mentioned earlier, over service support for the French divisions.

Three engineer regiments, one attached to each U.S. division, landed with the first assault wave. They each included personnel from all the services, not just engineers, and were essentially a base in miniature. Together they were responsible for carrying out the logistical work in the beachhead.¹⁷

The regiments first prepared the beaches to receive supplies. They cleared the shore of obstacles and mines. Sommerfeld metal matting was then placed over the sand in order to keep trucks from sinking into the soft surface; air was sometimes partially let out of the tires of a heavily laden vehicle for the same purpose. Next, separate dump sites were located near the beaches for the various classes of supply. Once these duties were completed, the transfer of the first maintenance supplies from water to land began.¹⁸

Trucks and tractors removed cargo from beached landing craft or ferries. Liberty ships anchored offshore were discharged by amphibious 2 1/2-ton trucks, known as DUKWs. Drivers delivered their supplies to the appropriate dump and then returned to the beach or water for a new consignment. Cargo was placed in nets in order to load or unload motor vehicles quickly. This packaging procedure allowed a crane to lift several

containers of supplies onto or from a truck's bed by a single movement of its arm. To circulate the nets, hence insure their availability--a driver was to receive two at the beach dump from either previously discharged trucks or the stock of 600 carried ashore by each of the engineer regiments. Both nets were later handed over to personnel on board a landing craft or Liberty ship.¹⁹

Logistics is often like a chain in that it can usually support only as much military activity as its weakest link will allow. If an army is amply supplied in all commodities except one, then that single scarcity, called a "limiting factor," inhibits in varying degrees movement and/or combat power. Well-fed and numerous troops plentifully equipped with tanks, trucks, ammunition and other items are still not an effective fighting force if they have little gasoline. It is normally preferential for all things to be in moderate supply rather than having a few critical shortages in an otherwise very sound logistical arrangement. With reference to the chain analogy, the former more desirable situation resembles a series of medium strength links while the latter has weak points interspaced between segments that are in themselves very strong.²⁰

During the early phase of DRAGOON's beach supply, a few limiting factors developed. Prior to the invasion, the Americans had expected to use local French civilians to help remove supplies from the cargo nets dropped by the trucks at the dumps. But most of the male population in the area was either too young or too old for the work. As a result, not enough nets were unloaded to keep in circulation, and they became in short supply.

To prevent this annoying situation from worsening, the engineer regiments changed the method of discharging trucks at the dumps. After lifting a net from the bed of a truck, a crane lowered it to the ground. The

rope binding the enclosed bundle at the top was now untied on one side and the net again raised, this time spilling its contents on the ground.

Although some containers broke in the fall, this improvisation allowed at least one net to be returned to the vessels beached or anchored along the shore, preventing a bottleneck in their discharge. A weak link in the logistical chain was thus bypassed.²¹

Another limiting factor was the lack of trucks in the beachhead. This shortage arose from the rapid advance of the Allies into the southeastern interior of France where the damaged rail system was temporarily inoperative. Forced to rely on motor transportation to haul supplies to distant combat elements, the armies formed a shuttle service, like the famous Red Ball Express, using some of the trucks originally intended strictly for beach work. Civilian vehicles, requisitioned by the engineer regiments, compensated somewhat for the loss. Until the railroads were repaired, there would be an insatiable demand for trucks.²²

The few logistical difficulties encountered on the beaches, however, did not prevent the work of the engineer regiments from being generally successful. The 266,000 tons of supplies, 46,500 vehicles and 270,000 men unloaded in southern France by D+25 (September 9) compare favorably with the scheduled buildup set prior to the invasion. An official historian of the U.S. Army has described medical service and supply at this time, at least for the American forces, "as near flawless as such a thing can be."²³

Several factors account for this overall success. Experience played a key role. Most American officers and soldiers participating in DRAGOON had been through at least one of the four earlier amphibious assaults in the Mediterranean. Seventh Army planners had consequently learned the importance of the DUKW in such operations and included a large number of

them for southern France. Beach dumps and Liberty ships were kept as close as possible to the shore line so as to reduce the turnaround time of the trucks transporting supplies. The shortage of men for unloading cargo nets gradually eased with the timely arrival of the first Italian service personnel on D+2 and by the use of prisoners of war. Weak enemy resistance, good weather and shallow water--these also contributed to making DRAGOON a "textbook landing."²⁴

No matter how ably performed, the Allies considered beach supply a temporary expedient until use could be made of Toulon and Marseilles. Ships docking in their harbors could deliver more tonnage than the engineer regiments could ever handle. To capture the two great seaports, the French II Corps launched a westward attack from the beachhead in their direction on August 20 (D+5).²⁵

The early fighting for Toulon and Marseilles threatened to overwhelm the meager resources of the French Medical Corps. The two mobile hospitals on shore at the time could muster only 780 beds between them, whereas 1,800 were normally considered necessary to support the 30,000 men engaging in combat. A delay in the arrival of the 531st Medical Company equipped with 80 ambulances posed a transportation shortage in the evacuation of the wounded: 120 ambulances were needed, only 75 were available. These means proved indeed woefully insufficient when about a thousand men fell wounded on the first day of the attack.

To remedy the situation, the French turned to the Americans and local hospitals for assistance. Both readily provided additional bed space and medical personnel. Meanwhile, système D (improvisation) was solving the transportation problem. Medical officers reserved the limited number of ambulances for emergency cases only. Those less seriously injured were

evacuated by jeeps, command cars and empty supply trucks returning to the beachhead for another load. For three days this patchwork arrangement held. Then, on August 23, the crisis passed with the arrival of the 531st Medical Company and a third hospital. At the same time, the casualty rate dropped as German resistance slackened and finally ended on August 28 with the capitulation of the garrisons at both Toulon and Marseilles. Future battles would, however, demand similar stopgap measures on the part of the French Medical Corps since it had only about half the required number of beds and ambulances to support the entire army.²⁶

With the capture of the two seaports, the French moved quickly north towards Lyon, nearly 200 miles from the Mediterranean coast and the beaches. In the general vicinity of that city, they established contact with the three American divisions participating in DRAGOON on or about September 2. This combined force then continued steadily northward with the object of joining with the OVERLORD units moving rapidly east across northern France and Belgium. Once this junction occurred, all German troops remaining in southwestern France would be effectively cut off from supply and communication lifelines to their homeland. The DRAGOON campaign in late August-early September consequently resembled a race as the Allies hurried to cut off the Germans fleeing from southern France towards the very borders of the Reich.²⁷

The Wehrmacht units retreating before General de Lattre's Armée B scarcely resembled those he had faced four years earlier as a divisional commander. The Nazi legions in southern France had lost their ethnic homogeneity and various nationalities (Poles, Russians, etc.), who could hardly be expected to fight zealously for a German Europe, dotted the thinning ranks. American supply officers working with prisoner-of-war

labor at Marseilles discovered on one occasion nine different languages in their midst. Furthermore, the supply status of the Germans compared poorly with that of the Allies. A lack of fuel, for example, hindered their withdrawal from France. This shortage forced troops on at least one occasion to "use the most unusual means of locomotion: bicycles with or without tires, damaged tanks, autos without gas harnessed to plow horses, mowers, forage carts, carioles of doctors and country bakers." The Allies were never reduced to this level of poverty, although their logistical superiority decreased as they advanced away from their base of supply (the beaches) and the enemy retreated towards his own (Germany).²⁸

As the Germans withdrew, they carried out a campaign of destruction in order to slow the pursuing French and Americans. Bridges were blown, railroads were damaged and the port facilities of Toulon and Marseilles were wrecked. But the fast-moving Allies allowed little opportunity for extensive demolitions. Time did not permit the widespread mining of roads or use of the "big hook"--an ingenious device capable of ripping railroad ties while deforming rails. Most buildings ideal for depots and repair shops escaped unscathed. In their haste to retreat, the Germans sometimes relied on French technicians of the P.T.T. (Postes, Téléphones et Télégraphes) to help with the destruction of their own communications equipment. Some of these "collaborators" cleverly feigned acts of sabotage to radio and wire installations, saving them for later use by Allied Signal troops.²⁹

The transportation system in southeastern France suffered the most during the German retreat. Engineers in the Seventh Army and Armée B were called upon to repair the damage. Bridge construction consumed much of their energies, for the Wehrmacht had destroyed nearly every important

crossing in the Rhône River Valley area and to the north beyond. A lack of bridging material complicated the task of rebuilding. This scarcity resulted largely from the preinvasion belief that the Allies would not encounter a major river obstacle until about D+45 (September 29); in fact, the French began crossing the Rhône and Durance Rivers a month earlier. Consequently, engineers often had to use construction materials obtained from local resources and captured enemy stocks, whose customary bulk probably rendered them difficult for the Germans to transport.³⁰

Work on downed railroad bridges continued through September. Progress was hampered by a lack of Military Railway Service personnel for whom DRAGOON's planners had expected little demand at this time. During most of the month, only one single-track line through the Alps, which branched into two at Grenoble, was open for traffic. (See Map 1 on page 36.) Two breaks along the route--one at Meyrargues on the Durance, the other at Sisteron on the Buech--forced the Allies to supplement trains with trucks. Supplies were transported by rail to Meyrargues where they were transferred to trucks then motored to Sisteron. At that point the supplies were loaded back onto a train for the final journey north. In mid-September temporary bridging at the two sites allowed uninterrupted railroad service from St. Raphaël to Grenoble, freeing vehicles for use elsewhere and eliminating lengthy and sometimes confusing changes from one mode of transportation to another.³¹

While other lines were under repair, trains moving through the Alps delivered about 1,500 long tons of supplies to the armies each day. The French received nearly half of this amount. But the daily needs of Armée B in gas, food and munitions alone totaled 1,400 tons on September 18 and were increasing as troops participating in DRAGOON continued to arrive in

southern France. The French therefore placed heavy demands on motor transportation in a frantic attempt to make up the difference. This reliance on road vehicles was customary in the wake of a rapid advance when railroads, easily damaged by a retreating enemy, were not functioning at full capacity.³²

During the DRAGOON campaign, trucks were inefficient long-distance carriers. In moving large tonnages they proved slower than trains, and their turnaround time increased as supply lines lengthened in late August and early September. During the trek from the beaches of southern France to forward combat elements and back, they occasionally consumed as much gas as they delivered. A low rate of yield was more prevalent among the French; their units were frequently equipped with the 1 1/2-ton truck as a substitute for the 2 1/2-ton model which had a larger load capacity. The greater number of men required to keep truck convoys operating also made them less profitable than trains.³³

The use of motor vehicles for lengthy hauling had deleterious effects extending beyond the Allies' rapid advance in late summer. Often overloaded and kept rolling day and night over roads that were not in the best of shape, trucks became worn and damaged. Poor first echelon maintenance compounded the problem. With the mirage of victory dazzling on the horizon, tired and sleepy drivers were little inclined to worry about the long-term benefits of maintaining proper tire pressure and a bothersome oil change. The exhaustion of matériel was naturally acute among the French units from Italy--whose equipment, though refurbished shortly before DRAGOON, had endured the rigors of that earlier campaign. Even those elements of Armée B coming directly from North Africa were not always blessed with the benefits of new matériel, since they had

sometimes used theirs during training exercises. As the war continued into fall and then winter, Ordnance was kept busy repairing vehicles suffering from the lingering aftereffects of the Allied blitzkrieg.³⁴

With rail capacity limited, the Allies had to use motor transportation, in spite of its disadvantages, for the overland movement of many supplies. This state of affairs existed until the excellent double-track line along the east bank of the Rhône became fully operational in early October. Before that time, however, there were not enough trucks to compensate for their poor efficiency as a supply carrier. At the front the demand for gasoline especially became serious, then urgent in tone.³⁵

Allied commanders resorted to various expedients in a desperate effort to fuel the forward momentum of the armies. To alleviate the truck and resulting gasoline shortage, Near Shore Control as early as D+2 directed that more of both items land with the D+20 convoy and those following than originally scheduled. Divisions and combat support elements moving towards the front were abruptly halted and their vehicles seized temporarily for supply work. Use was occasionally made of civilian transportation, and a high priority was assigned to the movement of fuel. Several of these above measures were contained in the following order issued by General de Lattre on September 6 as gasoline supplies dipped dangerously low in the II Corps driving towards Dijon:

In the present circumstances, it is absolutely necessary to direct on the forward zone at least 1500 m³ of gasoline [slightly more than a two-day supply, weighing roughly 1500 T.].

As a consequence:

1. The movements of the 9th [Nème] division will be immediately stopped. All the means of transportation of this division [grande unité] will be collected for the benefit of the army, only vehicles necessary for its own daily supply will be left to it.
2. The Pème [? sic] Antiaircraft Group and the Rème [? sic]

Antiaircraft Group will furnish 40 and 20 trucks respectively.

3. Food rations will be stopped for 48 hours.³⁶

These expediencies did not succeed in meeting all the supply requirements of Armée B. Units continued to signal a lack of gasoline, restraining the Allied drive to the north. In one instance this shortage helped delay for twenty-four hours the II Corps' attempt to encircle Lyon from the west. This pause allowed the Germans more time to proceed with their demolitions before departing. The frustrations of the French were well captured in the diary entries of Doctor H. Déloupy, chief medical officer of the 2nd Regiment de Cuirassiers, 1st Armored Division:

September 3. . . . we lack gas. Our advance is too rapid. At what a rhythm we are consuming fuel! Trucks have to bring it from Marseilles. It takes more than 700 liters [175 gallons] to fill up a single tank. . . . the gasoline arrives. At last! . . .

September 11. . . . still this problem of gasoline: our motors are dry. The Supply Service [Le Ravitaillement] makes, however, some superhuman efforts to furnish us with some; with jerricans they go to Avignon to get it At five o'clock this afternoon, the gas arrives. . . .

September 18. Ah! If fuel could only flow like water from a fountain! . . . For lack of having any, our pursuit marks time for three days. The gap is widening between the enemy and our troops.³⁷

As was customary among commanders at the front, General de Lattre blamed the communications zone for part of his logistical difficulties. Since the U.S. Army directed operations in the rear area, the Americans received the brunt of his criticism. While acknowledging that supplies were short in the U.S. Seventh Army during September, both he and de Gaulle believed that Armée B was given less than its fair share. Sharing this judgment, one French soldier, Jean Navard, wrote that he and his comrades wondered if the "Amerloques" were motivated by a desire to

reach the Rhine first. The division of supplies between the two national armies was an occasional source of friction between the two allies.³⁸

On September 12 the OVERLORD and DRAGOON pincers snapped firmly shut near Dijon. Trapped in southwestern France were thousands of German construction workers, agricultural laborers and service personnel. They soon swelled hastily built POW camps. But the Wehrmacht's combat divisions, though weakened by losses during their retreat, slipped through the Allied claws. Aided by reinforcements, terrain favorable for defense and DRAGOON's logistical difficulties, these forces slowed then halted the Allied blitzkrieg in mid-September. For two months, the front stabilized in the French sector approximately along the southwestern border of Alsace, Reich territory since 1940.³⁹

Chapter Three

The Communications Zone and Regulating Station 1

(September 1944 - February 1945)

On or about September 9, a communications zone came into existence in southeastern France. Its territory initially included the general path which the armies had taken from the Mediterranean coast to Bourg. Control of all logistical operations in this area passed from the Seventh Army and Armée B, soon the French First Army, to CBS and its attached Base 901 units. At about the same time, the name of CBS changed from Coastal Base Section to Continental Base Section, which had been the original designation prior to DRAGOON but was "rejected by the Intelligence Section as being too suggestive of our plans." The acronym, CBS, continued as an abbreviation for Continental Base Section.¹

Significant organizational developments occurred in the communications zone shortly after its establishment beyond simple name changing. The long supply line from the Mediterranean to northern Burgundy prompted the split of CBS on October 1 into an advance section and a base section. The former was known as Continental Advance Section (CONAD or CAS) and the latter, Delta Base Section. There was a similar division of Base 901, yet its separation was not as complete since the forward element, still referred to as Base 901, had some supervisory control over the one in the rear which was called Delbase 901.²

The Commanding General of CONAD was Major General Arthur R. Wilson, former head of CBS and an ardent Francophile. From his offices at Dijon, he directed the operation of depots and repair shops in the communications zone just behind the newly activated Sixth Army Group, to which the U.S. Seventh and the French First were the only assigned armies. Mobile service units were assigned to CONAD so that during an offensive it could quickly follow the advancing armies, taking over their rearward supply installations. CONAD handled fifth echelon repair work that could be completed in a short time; this procedure avoided long lines of evacuation. A similar logic applied to soldiers wounded in combat: those who could return to duty after a brief convalescence were retained in the advance section.

Behind CONAD was Delta Base Section. It was headquartered at Marseilles and commanded by Brigadier General John P. Ratay, an intellectual who had traveled widely. Troops under his authority unloaded the vast quantities of supplies arriving at ports in southern France. Delta Base either sent these items directly to the armies through CONAD or stored them in its extensive depots for its own use or later shipment forward. Badly damaged matériel and seriously injured soldiers were evacuated to Delta Base.³

Command and coordination of the two American supply sections was initially entrusted to an advance headquarters of Services of Supply, North African Theater of Operations, United States Army (SOS NATOUSA). Based at Lyon in September, it later moved to Dijon, where by November 1 its name had changed to Advance Headquarters, Communications Zone, Mediterranean Theater of Operations, United States Army (COMZONE MTOUSA Advance). As an intermediate step to transferring CONAD and

Delta Base to COMZONE ETOUSA (European Theater of Operations), the Southern Line of Communications (SOLOC) replaced COMZONE MTOUSA Advance on November 20. While subordinate to Lieutenant General John C. H. Lee, Commanding General, COMZONE ETOUSA, SOLOC often drew supplies from excess stocks in North African depots controlled by COMZONE MTOUSA. Led by the respected Major General Thomas B. Larkin--"the world's best man in logistics," according to General Jacob Devers--SOLOC operated with a great deal of independence and continued many of the supply policies inherited from COMZONE NATOUSA-MTOUSA. The final evolution in the command of CONAD and Delta Base occurred on February 12, 1945 when both organizations came under the direct supervision of General Lee. At the same time SOLOC disbanded with Larkin reassigned to Lee as his Chief of Staff.⁴

The rapidly increasing area and responsibilities of the communications zone in September and October overwhelmed the limited manpower of Base 901. Its lack of experienced technical and administrative personnel was keenly felt; the Chief Signal Officer, for example, was a reservist with little knowledge of American equipment. Further difficulties resulted from the loan of service units to the French First Army struggling to achieve logistical autonomy from the Seventh Army. These circumstances compelled Base 901 to rely greatly on CBS and its offspring for assistance.⁵

General Wilson realized the forward echelon of Base 901 by itself could not support the First Army as an advance section in the near future. CONAD would consequently be called upon continually to share the logistical burden of its French counterpart. But instead of the two supply agencies working separately in close liaison, Wilson wished to join both

under his command into a new, enlarged CONAD which would be responsible for supporting the two armies of the Sixth Army Group without regard to nationality. On October 23 he received permission to carry out his plan from General de Lattre, who was no doubt anxious to insure a firm base of service support for his combat forces.

By General Order 27, dated October 27, CONAD formally assimilated the feeble Base 901 operating in its area. The French commander at this time was Brigadier General Georges Granier. He and his staff were named deputy commanders in their respective areas, a practice begun with CBS's partial integration in August though they now technically supervised American as well as French service units. One Base 901 officer, Colonel Tony Albord, was chosen to head the Transportation Section of CONAD since he had a better understanding than his American deputy of France's road and rail system; he was the only Frenchman to hold the top post of a staff section. General Order 27 still allowed part of Base 901's operations to remain outside of Wilson's purview. These activities included: any supply work performed on behalf of resistance groups, known as the French Forces of the Interior (FFI); the administration of all Base 901 personnel on matters normally handled by the G-1 section of the general staff such as promotions, leaves, discipline and training; and the procurement of local supplies, mostly foodstuffs, for the First Army.⁶

Other U.S. supply agencies worked closely and in a supervisory role with the French. Delta Base had the authority to manage Delbase 901's operations and the two often pooled their resources. Teamwork was aided by the very cordial relationship existing between General Ratay and his French opposite, Colonel Mamier, whose staff was attached to that of Delta Base. At General Larkin's request, SOLOC integrated, like CONAD, a group

of French officers into its headquarters in December, including General Granier who became its deputy commander. Colonel Albord succeeded him at CONAD as Wilson's deputy.⁷

With every major command and nearly every staff section headed by U.S. Army officers, the Americans dominated the management of the communications zone. They directed the distribution of American supplies to the First and Seventh Armies. French officers assisting them performed mostly liaison work with the First Army, French service units and civilian agencies from which the Americans purchased goods and services, like the SNCF.⁸

While the communications zone was developing organizationally, it did so materially as well. The ports of Toulon and Marseilles began to function. Railroad capacity increased and replaced motor transportation for lengthy line-of-communications hauling. A pipeline from the southern coast of France to the armies insured a steady supply of gasoline. In short, service support from Franco-American logistical organizations for the First and Seventh Armies increased and even peaked during the fall of 1944.

Part of Adolf Hitler's strategy to defeat an Allied invasion from the West was to deny his enemies the use of ports. He reasoned that without a suitable location to unload supplies from ships, the Allies could not maintain a large army on the Continent. The Wehrmacht could then concentrate and overwhelm the small expeditionary force stranded along the coast of France. But Allied developments in beach supply--Dukws, artificial harbors (MULBERRIES), landing craft--permitted the support of a larger force than Hitler expected. Nevertheless, these innovations did not render his strategy completely obsolete. To maintain the sizable armies

necessary to carry the war into Germany, the Allies still needed the superior unloading capacity of ports, especially during winter when inclement weather would greatly curtail beach operations. The Germans therefore could hamper the enemy buildup by a stubborn defense of ports and by their destruction once capture seemed likely.⁹

This German strategy influenced tactical and logistical developments during DRAGOON's early phase. While Hitler withdrew the bulk of his forces from southern France, he also left two divisions for the defense of Toulon and Marseilles. He exhorted both to fight "to the last cartridge." Their resistance, however, was not nearly so fanatical; and during the eight-day battle for the two seaports, the French captured over 30,000 prisoners and "enormous quantities of munitions."¹⁰

But the German effort in destroying port installations was more in keeping with Hitler's wishes. At Marseilles all twelve miles of piers were demolished, all 257 cranes broken and 585,000 square yards of shedding (enough to cover 100 football fields) lay scattered on the ground like fallen houses of cards. Hidden in the debris were booby-traps intended to slow clean-up work. Numerous mines and ships skillfully scuttled made passage through the harbor impossible. While the damage to Marseilles was great, that to Toulon was even greater, partly on account of the heavier shelling used by the Allies in subduing the German garrison stationed there. U.S. Army officers decided in fact not to spend their time and resources restoring France's premier naval base. They preferred instead to concentrate on Marseilles with its larger port capacity.¹¹

Although German destruction to the two southern ports was extensive, it could have been worse. The absence of a bitter prolonged struggle kept the damage from being as severe as at Brest in the OVERLORD area which

fell only after a month-long siege. At Marseilles, for example, the Germans did not have enough time to detonate all of their mines in the harbor area. By limiting destruction of the seaports, hence speeding their rehabilitation, the swift capture of Toulon and Marseilles contributed to the early development of southern France's logistical potential.¹²

By September 2, U.S. Army and Navy engineers were fully engaged in the task of port reconstruction at Marseilles. They first built ramps for the landing of DUKWS and lighters which were used to unload Liberty ships anchored offshore. Large metal plates, called "hards," were positioned at the water's edge to act as bridges between the shore and landing craft being discharged. The engineers removed from the dock area thirty-two tons of explosives and 2,000 Teller mines, some of which were purposely detonated on the spot because their decomposed, sensitive fuses made removal extremely hazardous. Meanwhile, the U.S. Navy swept the surrounding waters clearing away 5,000 sea mines. Divers blasted superstructures from the hulls of scuttled ships, permitting Liberties to enter the harbor.¹³

As repair and clearance work proceeded, the port of Marseilles gradually revived. Ship-to-shore discharge began on September 15. Ten days later a total of sixteen berths were available, five days after that eighteen. By the end of the month, with daily port discharge approaching 15,000 tons, CBS ceased all beach supply operations. By contrast, insufficient port facilities for the OVERLORD units forced their continued reliance on the beaches through all of October and even into early November. Logistically, the north lagged behind the south at this time.¹⁴

Other ports besides Marseilles were rehabilitated in southern France though it remained the most important. The French and U.S. Navies

restored Toulon, whose limited facilities for commercial shipping were used for the reception of mostly Civil Affairs supplies. Port-du-Bouc, a satellite port of Marseilles thirty miles to the west, became partially operational on September 9; it handled much of the incoming tanker traffic because of its immense storage capacity, which eventually topped 1,500,000 barrels. St. Raphaël, Cannes and Nice were sometimes used for importing small tonnages.¹⁵

In October and November, with dockside discharge at full tilt on a driving, round-the-clock schedule, one million tons of dry cargo excluding vehicles passed through southern France. This tonnage accounted for nearly forty percent of all such U.S. supplies entering the European theater during this period and was enough to maintain thirty divisions and their support units for two months, assuming supply classes were in correct proportion and no buildup of reserves. During the entire European campaign, from June 6, 1944 to May 8, 1945, one fourth of all supplies and personnel unloaded at U.S. controlled ports and beaches came by way of southern France.¹⁶

Port clearance could not initially keep pace with the steadily increasing discharge rate. The rail system, still recovering in early autumn, could not move the heavy tonnages arriving at Marseilles. In the immediate harbor area, a shortage of trucks, caused in part by their continued use as long-distance carriers, resulted in crates and boxes accumulating along the quays. Until the cargo congestion cleared, a temporary embargo was placed on shipments to Marseilles.¹⁷

A lack of motor transportation prohibited Delbase 901 from offering much assistance in the removal of supplies from the docks. The slow activation of its truck battalions in North Africa delayed their transfer to

southern France. When the units finally began arriving in late October, there was an appalling lack of trucks and trailers: the 515th, 516th and 517th battalions possessed only 145 vehicles instead of the authorized 528. The exact fate of the remaining 383 trucks and other missing rearmament equipment, which COMZONE NATOUSA-MTOUSA tried to recover, was the subject of much debate between the Americans and the French. General Leyer maintained that deficits were due to insufficient shipments from the United States and simple misplacement while General Larkin asserted that the French had assigned these "lost" vehicles to units not included in the rearmament program like the FFI and the 1st Brigade of Spahis. In any case, the Sixth Army Group cabled a request for the issuance of trucks to the three French battalions, to which COMZONE NATOUSA replied on October 26 that "vehicles are not available at the present time for issue to these units from U.S. stocks without jeopardy to U.S. Forces [sic]. In order to permit utilization of these units, vehicles will be issued on a temporary basis from those provided to Delta Base for port clearance." The French were thus loaned 123 trucks, of which 95 were in good condition.¹⁸ This incident and others of initial equipment shortages must have served as reminders to the Americans of continued French irresponsibility in logistical matters.

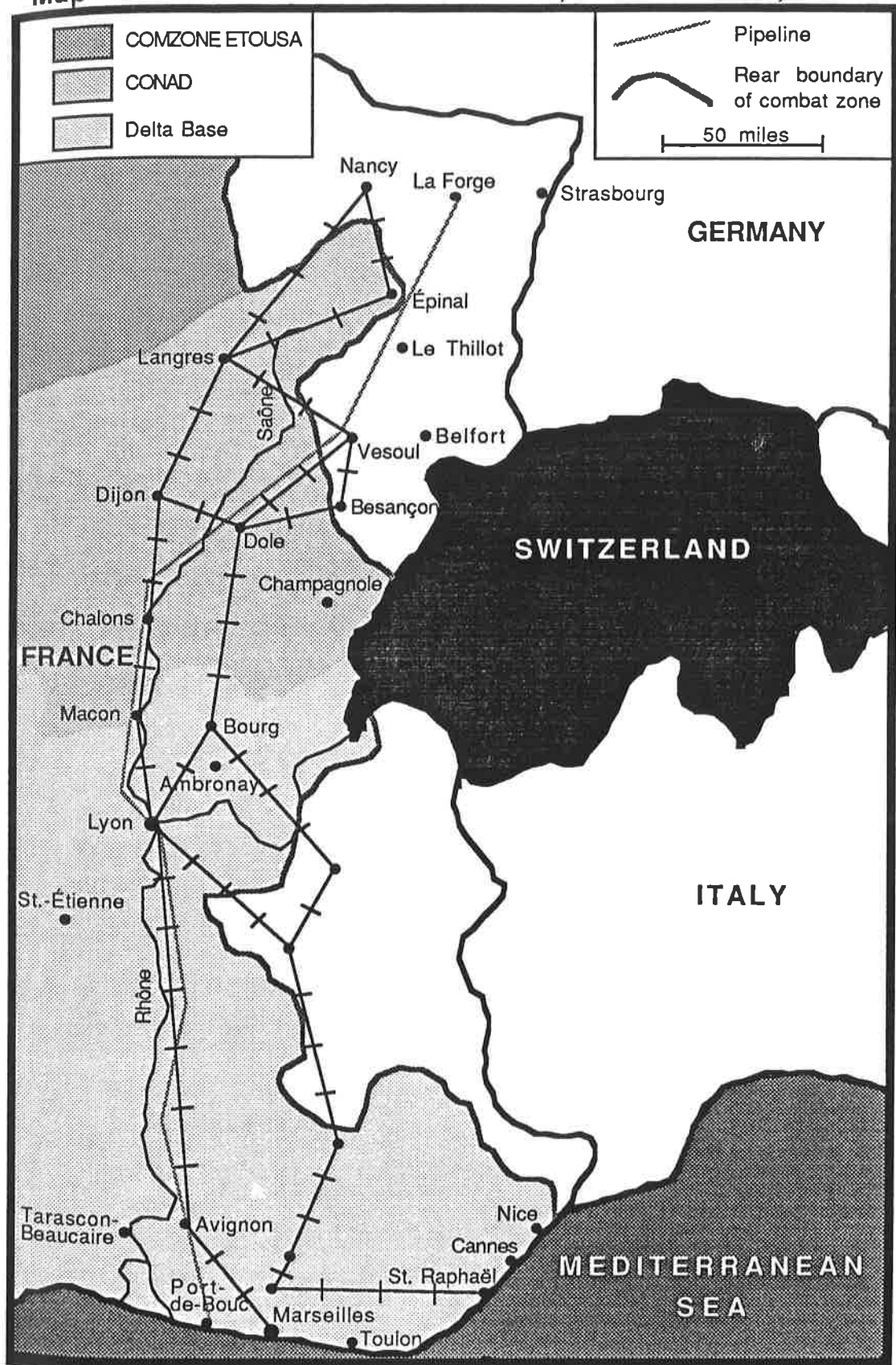
The transfer of motor transportation from strictly port duty indicates that Delta Base was now clearing cargo at a satisfactory rate. By November 1 there were 1,100 military trucks in use at Marseilles harbor, allowing the release of costly, inefficient civilian transportation, including horse-drawn carts, which had been pressed into service earlier. Further evidence of improvement in port operations comes from the diversion of shipping in late November to Marseilles from northern France,

where a huge backlog of "floating warehouses" had accumulated. Increased rail capacity played a major role in the forward movement of supplies from the once congested Mediterranean coast.¹⁹

The shift from trucks to trains for line-of-communications hauling began in late September with the opening of the excellent double-track line on the east bank of the Rhône. (See Map 2 on page 58.) The first train between Marseilles and Lyon pulled out of the port city on the 25th. Three days later the rail net was extended to Dijon and then to Besançon in the First Army region. Railroad traffic passing north of the Rhône reached approximately 7,200 short tons a day by October 4 and almost 10,000 two weeks later. With this rate of delivery, trucks were no longer essential for the overland movement of supplies and orders were issued prohibiting their use for this purpose.²⁰

In spite of greatly improved service, rail transportation remained a moderate limiting factor and prevented the southern French ports from being used to their fullest extent. One cause was the shortage of motive power which was eased in late November by the Seventh Army's capture of fifty engines at Strasbourg. Additional assistance came from the shipment of American locomotives from North Africa, almost all of which needed repair since French troops stationed there had not maintained them properly. A lack of coal, particularly of high grade, also hindered rail operations. This problem was largely overcome by a combination of solutions: the conversion of American steam locomotives into oil burners; the repair of the Tarascon-Beaucaire bridge over the Rhône which opened a supply line to a mining district near St. Etienne; and the importation of 25,000 tons of coal from Great Britain. Just when the transportation bottleneck seemed over, an early winter decreased rail activity by nearly

Map 2: The Communications Zone, December 31, 1944



twenty-five percent. It did not recover until an equally early spring arrived in February.²¹

Shortly after the Rhône railroad began functioning, the French complained that the division of rail tonnage between the First and Seventh Armies was unfair. Both were experiencing shortages at this time, a circumstance which often promoted rivalry for gasoline, ammunition, food and other commodities even among forces of the same nationality. Complicating the question of equitable distribution was the fact that at this time the First Army was drawing some of its supplies from Seventh Army depots. In a letter to General Devers, commander of the Sixth Army Group, General de Lattre noted that from September 20 to 28 CBS had forwarded on average over 2,000 tons of supplies by train each day to the three divisions of the Seventh Army; on the other hand, the five divisions of his army had received less than half this amount. De Lattre went on to explain his tactical difficulties and to vent his frustration:

The complete lack of ammunition and especially gasoline has forced the II Corps, on the morning of the 30th, to pull out of a fully engaged fight, thereby compromising the unmistakable advantages acquired in the course of the preceding days. The maneuver begun in order to seize Le Thillot has been deferred. . . . it is quite an unfortunate situation for an army engaged in full battle, to be thus abandoned without gas and without ammunition. It has been moreover demonstrated that, contrary to established provisions [see chapter two, pages 31-32], this army has been treated unfairly for twenty days in a manner seriously prejudicial to its life and action.²²

French complaints prompted a conference on October 2 at Marseilles. Among those present were Generals Wilson, Ratay and Gross, then commanding Base 901. During the meeting General Gross pointed out that since September 25 only two or at the most three trains were sent to the

First Army out of the nine which left Marseilles for Lyon every day. To equalize this imbalance, he asked that for the next five days seven trains be dispatched daily to the French. In addition, Gross faulted the technical aspect of American railroad policy. He pointed out that the Military Railway Service (MRS) had prohibited the French from loading more than 500 tons on any of the First Army's trains despite the opinion of SNCF officials that the Rhône line could easily support 700 tons. The American officers listened to the critical comments and promised to correct any unfair distribution of supplies. They accepted Gross' proposed adjustment of rail transportation for the next several days.²³

The mercurial de Lattre continued to simmer over what he considered to be the discriminatory practices of the Americans. During a visit by General George Marshall on October 8, he poured forth a torrent of grievances against the American supply services. But the U.S. Chief of Staff was in no mood to listen. General Devers remembered years later that Marshall "lit right into de Lattre," informing him, "I'm tired of hearing you complain about these things." Marshall eventually recovered his diplomatic composure and assured his French host that he would look into the matter and correct any wrongdoings. Later, when the Americans were alone, Devers reported to his superior: "We gave the French all their share and a little more too. This is just an emotional outbreak."²⁴ The distribution of supplies between the First and Seventh Armies remained a sensitive point in the Franco-American military coalition.

Trucks and trains were not the only conveyers of supplies to the armies. Two pipelines, one of four-inch and the other of six-inch diameter, pumped gasoline from Port-du-Bouc towards the combat zone. On September 25 the line had only reached Avignon; but from here progress

was rapid in spite of the unusually wet, cold autumn weather, which hindered construction and made working conditions miserable. By the end of the year, U.S. Army engineers had extended the pipeline into Alsace, halting at La Forge because of the proximity of the front. (See Map 2 on page 58.) Along the path Signal Corps troops installed a valuable telephone system to monitor the flow which averaged 13,000 barrels (2,600 tons) daily. In January the French 720th Engineer Petroleum Distribution Company (la Compagnie Technique 720 du Service des Essences), trained by the U.S. 1379th in Corsica, arrived in France to operate a thirty-five-mile portion of the pipeline between Lyon and Macon. The remaining 350 miles were entrusted to the Americans, showing once again their dominance of the communications zone.²⁵

Moving fuel by pipeline had its drawbacks. Since the lines were often laid along roadsides for ease of construction and surveillance, they were susceptible to damage by vehicles particularly during icy weather. The speed of assemblage, three miles per day per petroleum distribution company for the six-inch pipe, did not allow it to follow in the immediate wake of a rapid advance. While enemy saboteurs were a constant threat, common thieves drained off more gasoline by punching or drilling tiny holes in the pipe. During one month the Americans attributed the loss of 6,000 barrels to such illegal tapings. Much of the stolen fuel was sold in the black market which the U.S. Army tried vigorously to suppress; Delta Base, for instance, demanded that French courts impose swifter and harsher sentences on civilians guilty of engaging in this illegal trade.²⁶

The advantages of the pipeline outweighed its bothersome vulnerability. Its greatest asset was that it lightened the burden placed on more traditional road and rail transportation: every ton of gasoline

pumped forward was a ton that overworked trains and trucks did not have to carry. The pipeline was not easily attacked from the air though it was sometimes damaged when placed on a bridge over a river, a favorite target of hostile planes. It could function day or night in almost any weather. Finally, it did not betray to a vigilant enemy the usual increase in supply activity prior to an offensive. One enthusiastic army officer judged the pipeline's success as "truly phenomenal [sic]."²⁷

Besides the railroads, another limiting factor in southeastern France was the lack of service personnel. This bottleneck was due mainly of course to Base 901's meager contribution in this regard. The problem became critical when the divisional strength of the Seventh Army jumped from three in late September to nine by mid-November. Although Supreme Headquarters, Allied Expeditionary Forces (SHAEF) allocated 44,000 additional support troops for the combat and communications zone, it was not enough for the increased fighting force. In an attempt to receive more men for SOLOC, General Larkin pointed out in December that American and French effectives under his command totaled just 88,164 and 18,300 respectively; with seventeen divisions in the Sixth Army Group, he calculated a communications zone slice of only 6,262 instead of the authorized 10,000. While admitting the legitimacy of Larkin's needs, SHAEF sent little help since it was more preoccupied with events to the north in the Twelfth Army Group region. SOLOC thus turned to other sources of manpower of which there were three: Italian service units, German prisoners of war and French civilians.²⁸

Before DRAGOON began, the U.S. Army made plans for the large-scale use of Italian service troops in southern France. One of the worries at this time was that the French populace would strongly object to the presence

of a recent enemy on its soil; but except in Corsica, which Mussolini occupied in late 1942 following TORCH, this fear proved unfounded. Already in December when Larkin was pleading for more service units from SHAEF, there were 22,000 Italians at work in CONAD and Delta Base. The assistance they rendered influenced SHAEF's decision not to send additional U.S. troops to SOLOC though it was recognized that Italian service units were inferior to their American equivalents--by fifty percent according to one quantitative-minded observer. Having little choice, SOLOC continued to rely on them especially for unskilled manual labor. Their numbers rose markedly at CONAD, from 2,453 on October 30, 1944 to 14,688 on February 28, 1945. All together there were nearly 38,000 Italians in the communications zone at the end of the war.²⁹

In their first two months of operations, CONAD and Delta Base used prisoner-of-war labor sparingly. But in December, following orders from General Larkin, both began implementing programs to increase exploitation of this nearly untapped manpower. During January and February of 1945, the number of German POWs assigned to CONAD trebled to 12,000 and approximately twice that number were on duty at Delta Base. Like the Italians, they performed many wearisome chores such as stocking supplies in depots and decanting gasoline from bulk containers to five-gallon jerricans. But in addition to man power, the Germans offered another priceless dimension not often found among the Italians: technical skills. CONAD, for example, was able to use German POWs at its ordnance arsenals assembling and repairing motor vehicles and their component parts (engines, transmissions, differentials, etc.). The quality of their work was quite satisfactory and they earned the grudging respect of their captors.

"The German, let it be said in all honesty, was the equal workman to the American," so claimed one U.S. authority shortly after the war.³⁰

French civilians were another source from which SOLOC drew in order to ease its shortage of service troops. Like the Germans and Italians during the same period, their numerical strength edged upward from roughly 20,000 in November 1944 to 30,000 three months later. Most worked in the base section toiling on the docks at Marseilles or at one of the huge nearby depots such as at Miramas and Rognac. With the help of Delbase 901, the Purchasing Agent of Delta Base hired local civilians, who were actually not paid in most cases by the American army but by the French government instead. In return the United States credited the amount to France's lend-lease account. This financial arrangement was called reciprocal aid or reverse lend-lease and was a means by which France lowered its American debt.³¹

Though not employed by Delta Base or CONAD, other French civilians worked for the benefit of the communications zone. These were the men and women in local industries and government agencies. Again through reciprocal aid American purchasing agents sometimes bought their goods and services. Not only did these buys give ready access to desired items but they conserved shipping space as well. Cement from a plant at Champagnole, lumber from mills in Doubs and Jura, barbed wire, acetylene, gaskets and other products were obtained in this way. During one month Delta Base purchased \$442,613 worth of goods saving 46,599 ship tons, equivalent to the space capacity of six Liberty ships each of which carried on average 4,800 long tons. The Americans also contracted for services from the SNCF for the conduct of rail transportation and the Ponts et Chaussées for the repair and maintenance of bridges and roads; as in the

direct hiring of civilians, this type of French aid released U.S. service troops for duty elsewhere.³²

The American demand for French labor and products outstripped their supply. The major cause of this gap was France's exhaustion after five years of war and occupation. Industry was recovering slowly as a transportation crisis impeded shipments of coal, the lifeblood of most European manufacturing. The human commodity was also lacking since about two million of the nation's more productive citizens had been deported for service in the Reich or internment in prisoner-of-war camps. In their attempts to obtain greater civilian assistance, purchasing agents also encountered competition from de Gaulle's government, which wanted to use part of the leftover resources in men and materials on the equipping of six new combat divisions for the French Army.³³

During the early fall of 1944, the communications zone of the Sixth Army Group assumed its general character. Supplies began arriving by ship at southern French ports, where they were discharged by troops assigned to or supervised by Delta Base. From the coast they were forwarded by train or pipeline to CONAD and eventually into the combat zone of either the First or Seventh Army. Aside from a few items procured locally, these supplies were of American origin; and they traveled along a somewhat undermanned line of communications that was largely under American management. But for the First Army there existed another line of communications, another source of supply, and both were completely French.

During its rapid advance from Provence to Alsace, the First Army attracted scattered resistance groups along the way like a magnet passing over iron filings. These guerrillas were collectively termed the French

Forces of the Interior (FFI) and by early October over 50,000 had joined the First Army. The French urged the Allies to help rearm and maintain the poorly equipped FFI. But with few exceptions SHAEF refused to support on a regular basis any units other than those belonging to the original DRAGOON Troop List. Accordingly, only FFI personnel replacing combat losses or demobilizations in the North African regiments received an adequate allotment of U.S. supplies. Logistical support became an immediate and growing problem for the remaining irregulars outside the African divisions who still numbered over 30,000 in late November.³⁴

The most urgent need of the FFI was naturally food. The high-calorie content of American rations provided part of the solution, and these were often pooled with subsistence from other less plentiful sources then evenly distributed among FFI and regular army units. Local food supplies, when available, were exploited to the maximum. Captured enemy stocks provided some relief, particularly the German quartermaster dumps seized during the Battle of Belfort in late November.³⁵

Relying on makeshift and irregular sources of supply was dangerous for such an essential commodity as food. The First Army needed a more systematic method of provisioning its FFI elements. For that purpose President de Gaulle's government decreed on October 14 the establishment of a French line of communications to begin functioning before the month ended. In the logistical arrangement produced by this decree, the Minister of War, André Diethelm, established supply quotas for the various military regions of France; the requisitioned items were then shipped to depots (Stations-Magasins) at Chalon-sur-Saône and Ambronay behind the combat zone; upon the request of General de Lattre's Chief Quartermaster, General

Benoiton, supplies were transported by rail to army depots, completing the final leg of the French line of communications.³⁶

The organization charged with moving and storing French foodstuffs was Regulating Station 1 (Regulatrice de Communications Numéro 1). Its headquarters opened at Dijon on or about November 1. Besides providing subsistence to the FFI, the Minister of War assigned to the new supply agency the following missions on behalf of the First Army: to furnish to all troops certain quartermaster items not included in American rations such as wine, oil, flour and fresh meat; to help Base 901 evacuate the wounded to French hospitals; to supply forage for animals; to establish a postal service between the First Army and France; and generally to provide anything unobtainable from the Americans.³⁷

Several factors hindered the efforts of Regulating Station 1 to carry out its logistical duties. Like Base 901, it lacked sufficient personnel. The Germans had severely damaged the warehouses at Chalon-sur-Saône and Ambronay, and their lengthy reconditioning postponed deliveries from the military regions. The official history of Base 901 states in fact that "it was only around December 15 that they [the depots at Chalon and Ambronay] began timidly to function." But the greatest weakness of the French line of communications was the enfeebled state of France's economy, which greatly limited the availability of all supply items. Furthermore, the French High Command allocated most of these scarce commodities to its overly ambitious program to equip and maintain additional combat divisions.³⁸

The service support provided by Regulating Station 1 was therefore small in comparison to that given by CONAD, Delta Base and their French contingents. Prior to December there is no record of any French supplies

delivered to the First Army. In February, after Regulating Station 1 had become fully operational, it furnished 8,980 tons of food and forage to the First Army, fifty percent of which was wine and brandy. During the same period CONAD sent 19,300 tons of rations. But while supplies from Regulating Station 1 were confined almost exclusively to food products, those from CONAD were not; and in February it shipped another 48,400 tons of gasoline, ammunition, tanks, trucks and other products. The First Army thus received most of its rations and practically all of its other supplies through CONAD.³⁹

By itself, the tonnage sent by CONAD or Regulating Station 1 gives little indication of its adequacy. Unless supplemented with information regarding the First Army's logistical condition, tonnage figures, like those cited above, remain without reference and void of meaning. To see how well the two lines of communications supported the First Army, an examination of its supply status is required.

Chapter Four
The Supply Status of the French First Army
(September 1944 - February 1945)

A period of stalemate followed the First Army's spectacular dash of late summer. Meters replaced kilometers as the unit of measurement best suited to describe daily tactical advances. In the early fall, the French failed to make any notable progress against steely German defenses in the Vosges Mountains. The battle front remained almost stationary along the western border of Alsace from mid-September to mid-November.¹

During this time the First Army became independent of the U.S. Seventh Army in both operations and logistics. On September 15, SHAEF activated the Sixth Army Group, headed by General Devers. This new command immediately assumed operational control of the First Army from the Seventh Army. The latter army was also assigned to Devers' group.²

But the First Army could not quickly remove itself from the logistical tutelage of the U.S. Seventh. Confusion persisted among the French over American supply procedures. They were unable to provide an accurate accounting of the matériel in their possession; this poor bookkeeping delayed the arrival of some maintenance equipment. Throughout October General de Lattre's troops continued to depend on the Americans, though to a diminishing degree, for assistance in the establishment and management of army depots as well as the preparation of supply reports and requisitions. The First Army in fact did not submit its first Weekly G-4

periodic Report until the middle of November. By that time, however, the French had severed all logistical connections with the Seventh Army; henceforth, the First Army relied on itself for combat service support.³

During October and the first half of November, the supply status of the First Army steadily improved. Stocks rose as trains moved heavy tonnages over the Rhône Valley railroad. On November 11 a six-day supply of food and a thirteen-day supply of gasoline filled the Army's depots. The trains also delivered the ammunition which had been earmarked for DRAGOON in abundance but largely unfired during the dash from Provence to Alsace. Thirteen thousand tons of ammunition arrived from November 5 to 11, boosting the estimated reserve for the 105-mm howitzer M2 to a twenty-one-day supply. No other subsequent week approached this tremendous shipment of firepower. As General de Lattre prepared to unleash an offensive on November 14, his thoughts were troubled about the secrecy of the attack, the effect of a recent snowfall on maneuverability, but not the supply status of his combat troops.⁴

Nevertheless, a few shortages existed amidst this plenty. Nearly all items, but especially weapons and ammunition, were lacking in the FFI units attached to the First Army. In addition, the entire Army did not have enough winter clothing.

The logistical plight of the FFI troops stemmed from the refusal of the United States and the inability of France to supply them for combat. The professional soldiers of the U.S. Army considered the French irregulars of questionable value in traditional military operations: there was too much youth and inexperience in the FFI, too little discipline and training. The American High Command believed that supplies were better spent on regular army units. At the same time, France was unable to give much

assistance, because its economy was in disarray. The small quantities of guns and ammunition which did dribble from French factories were usually sent to FFI troops other than those fighting with the First Army in Alsace.⁵

To provide his FFI with a minimum of equipment, General de Lattre redistributed the relative wealth of the North African Army. Despite American objections, he diverted maintenance matériel from units listed on the DRAGOON Troop List to those which were not. While his action achieved the intended effect, it forced the North African units to continue using worn radios, trucks and clothing. When these overworked items became completely unserviceable, there were few reserves to immediately replace them.⁶

But de Lattre did not divert any tanks, artillery and guns to the FFI. He reasoned that "to risk decreasing the firepower of some on the pretext of increasing that of others would have been foolish." Like his American colleagues, he may have also thought that the African troops could make better use of such vital equipment for combat. FFI soldiers consequently had to make do with the guns which they either brought along when joining the First Army or found later in the combat zone. They obtained practically no artillery or tanks from such irregular sources. Instead, they gathered an odd assortment of light arms which represented, in the words of one observer, "a nearly complete sample from all European and Asian museums covering the period 1900 to 1945." It proved difficult to provide ammunition and spare parts for all these various weapons, and the guns of the FFI were sometimes silenced for this reason. Insufficient arms and ammunition limited the FFI to a minor role in the combat operations of the First Army.⁷

On a chilly October day, Pierre Lyautey, a French liaison officer, was journeying through the Vosges Mountains. Along a dark and forested slope, he saw goumiers of the 3rd Group of Moroccan Tabors. He noted in his diary that they presented a pitiful sight "with their summer uniforms and their shoes without soles." Later, during a walk that same day, he spotted a dead German soldier. Lyautey stopped to look and was quickly puzzled by one detail. He asked: " 'Why does he still have on his boots?' 'Because they have holes in them,' " volleyed back the answer. "Wisdom of the infantrymen and goumiers," he tersely mused in his journal.⁸

As the events recorded by Lyautey suggest, the First Army did not have enough warm clothing in the fall and winter of 1944-1945. This problem cannot be attributed to any discrimination by the U.S.-run communications zone. From October 2 to December 31, CONAD sent 2,900 tons of quartermaster equipment and clothing to the First Army but only 1,263 tons to the Seventh Army; yet the Americans, with as many effectives, experienced no particular hardship. A partial explanation for the difficulties of the French comes from General de Lattre's transfer of quartermaster supplies to the FFI. Of at least equal importance was the shortage of initial equipment and clothing in the First Army prior to DRAGOON: troops landed in southern France without their full complement of pants, boots, blankets, canteens, tents and other quartermaster items. The French used most of the tonnage sent by CONAD to partially fill these original deficits and to supply the FFI.⁹

The clothing shortage adversely affected the physical condition of the troops. Frostbite and trench foot began to decimate the army as the warm sun of August gradually yielded to cold rain in October, then wet snow in November. During six days of winter battle, the 6th Moroccan Rifle

Regiment lost 300 men to trench foot alone. In an extreme case, cold-related injuries and fierce fighting in the snow-covered forest of Nonnenbruch near Mulhouse lowered a few infantry companies to about twenty men or fifteen percent of their normal strength.¹⁰

To obtain more clothing, some soldiers resorted to stripping the wounded. According to one report, this "pillage" occurred more frequently at the aid stations of the FFI. The Chief Medical Officer, General Guirriec, issued orders prohibiting this unhealthy practice and launched an investigation into the matter. But his efforts produced only modest success, and as late as March 12, 1945, the Ministry of War sent the following message to General de Lattre:

The wounded evacuated from the First Army continue . . . to arrive in the Hospitals of the Interior completely without clothing.

As a result, a significant number of soldiers--convalescing or even healed, now estimated at around 6,000--remain in hospitals for the simple reason that the present difficulties do not permit them to be dressed.

The seriousness of this situation, not only with regard to turnover in the hospitals and its affect on their capacity but also the rapid reclaiming of effectives, will not escape you.¹¹

A critical need of shoes, coats and other articles of clothing plagued the First Army, especially its FFI units, until the end of the war.

On the night of November 10, a great and invisible motion began. Through the blackened French countryside, thousands of First Army vehicles crept along roads with their lights off. Carrying troops and supplies, most were headed towards the bend of the Doubs river, southwest of Belfort. By dawn on the 11th, the heavy traffic of trucks and tanks had vanished, disappeared . . . only to return on the following two nights.¹²

These nocturnal movements marked a change in the strategy of General de Lattre. Previously, he had attempted to break into the Alsatian plains

by forcing a passage through the Vosges Mountains. But his II Corps had made little progress along that arduous route. He would now try another avenue of attack, the one in front of his I Corps: the Belfort Gap. During three November nights, de Lattre shifted the weight of the First Army from the Vosges in the north to the Doubs in the south.¹³

Since the I Corps was to spearhead the coming offensive, the supply services distributed their resources accordingly. Ordnance sent twice as much ammunition south as it did north. By the date of the attack, November 14, nearly 25,000 tons of ammunition were within reach of the I Corps while the II Corps had 6,000 tons at its disposal. The Gasoline Service (Service des Essences) pushed fuel stocks as far forward as possible in hopes of supporting a breakthrough at Belfort. Anticipating high combat losses in the I Corps, the Medical Service dispatched additional personnel and hospitals to the Doubs bend.¹⁴

The morning of the attack saw low fog hovering over the front. Unable to sight its artillery, the I Corps delayed H-Hour until midday. At that moment an intense barrage erupted from the guns of the 2nd Moroccan Infantry Division. The Germans were caught completely off guard; unaware of de Lattre's recent transfer of strength, they had kept most of their units in the Vosges watching the French II Corps. Under the mounting pressure of the I Corps' assault, the thin German line at Belfort bent and finally broke. Through the gap poured the French 1st Armored Division. It reached the Rhine river on November 19 and took Mulhouse three days later. During this period of rapid movement, the army's consumption of fuel climbed to 1,300 tons, yet the Gasoline Service met the heavy demand with little difficulty.¹⁵

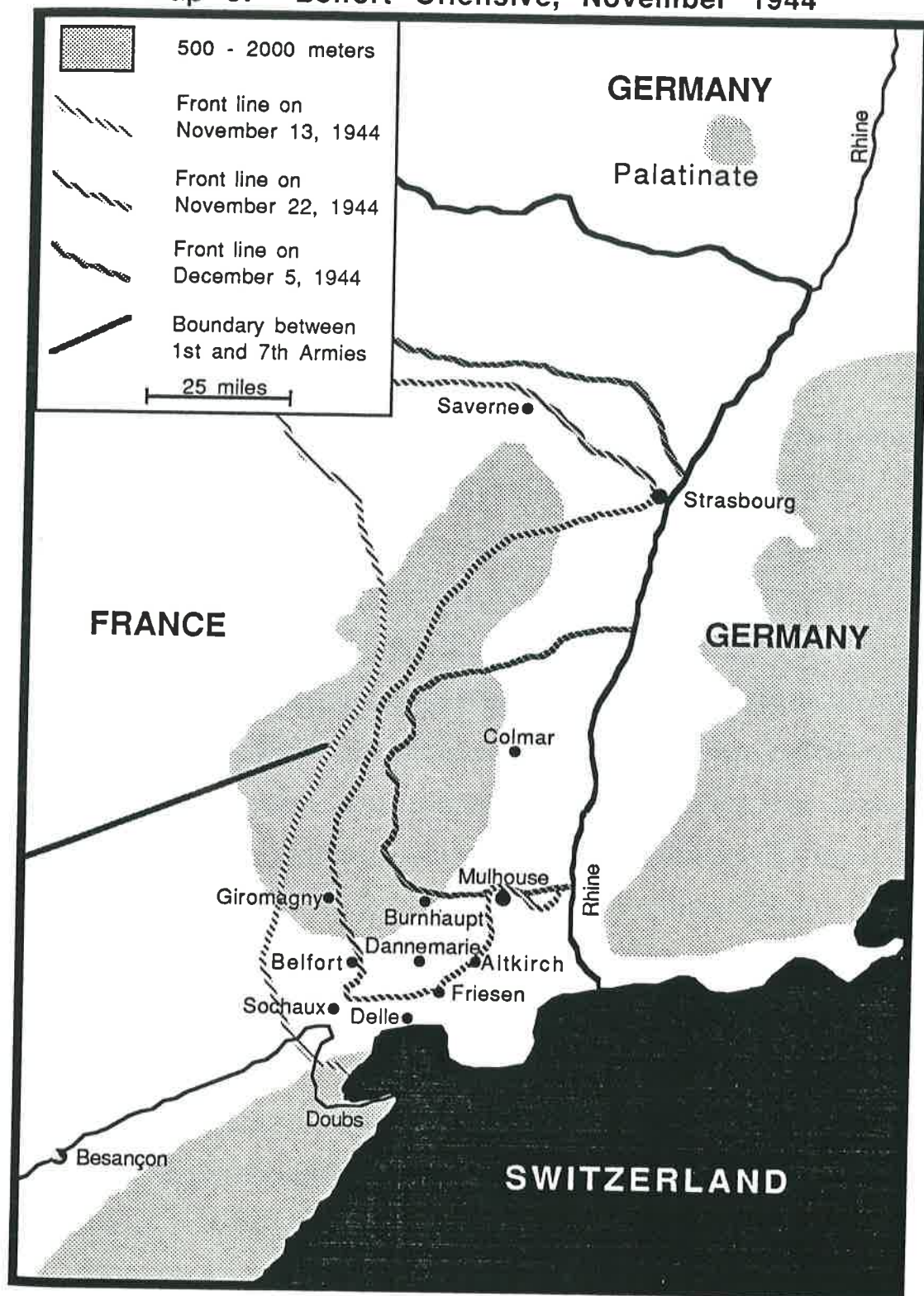
As French tanks neared Mulhouse, the front began to assume the shape of a giant "U." (See Map 3 on page 76.) The battle line of the II Corps from Giromagny to Sochaux formed the left side while that of the I Corps from Sochaux to Mulhouse via Friesen made the bottom and right. Less than six miles south of or below the base of the "U" was the frontier of Switzerland; thus, there was in a sense a dash under the vowel, and through the narrow corridor formed between the two figures ("U") passed the supply line of the 1st Armored Division. Inside the "U" was the German LXIII Corps. On November 21 this unit launched a southward attack to cut off the French armor to the east at Mulhouse. A see-saw battle developed and raged for several days just north of the Swiss border.¹⁶

The fighting along the Sochaux-Friesen corridor disrupted logistical operations supporting the 1st Armored Division. German infiltrations, and the traffic snarl which they produced, slowed the arrival of gasoline, ammunition and infantry reinforcements. Lacking these, French tanks were unable to punch their way through the Wehrmacht's stiffening resistance north of Mulhouse. Evacuation of the wounded was also upset as noted in the 1st Armored Division's medical journal:

November 26. 8 p.m. The Office of Movements of the Division relates that traffic has been interrupted on the road from Delle, and that the ambulances which evacuated the wounded during the day are unable to pass Since it is impossible for them to return to Mulhouse, the hospitals of this city being filled and the GPCA 2 [?sic] not able to receive any wounded either, a message is sent to the Office of Movements asking that it order the Traffic Division to give these ambulances priority of passage as soon as traffic is reestablished.¹⁷

The logistical situation of the 1st Armored Division soon improved. By November 25 French tanks of the 5th Armored Division had assembled at Altkirch, ten miles southwest of Mulhouse, after having crossed the

Map 3: Belfort Offensive, November 1944



Sochaux-Friesen gantlet. On the next day the tanks rolled through the German line and reached Dannemarie. This advance uncovered the left flank of the German units facing the Swiss border, and they began to retreat northward, ending their attacks against the 1st Armored Division's line of communications. French forces from Giromagny, Mulhouse and Dannemarie now converged on the city of Burnhaupt. There, on November 28, they met and trapped what remained of the German LXIII Corps to the south, about 2,000 men. The giant "U" had become a small "o." Surrounded on all sides, the Germans surrendered before the month ended.¹⁸

Allied conquest of all of Alsace now seemed imminent. Along with the First Army's liberation of the southern part of the province, the U.S. Seventh Army to the north had advanced through the Saverne Gap and captured Strasbourg. In early December the only territory which the Germans still occupied between Strasbourg and the Swiss border was a semicircular area centered around the city of Colmar. The Intelligence Section or G-2 of the Sixth Army Group reported that less than 20,000 enemy soldiers were defending this salient. Confident that the First Army could eliminate this meager force with little assistance, General Devers turned the bulk of the Seventh Army north away from Colmar towards Germany's Palatinate district.¹⁹

But Devers' optimism was misplaced. Throughout December the First Army managed only to dent the German line a few miles, and during the first half of January the French even lost a little ground.²⁰

Several factors account for the First Army's failure to reduce the Colmar pocket during this period. The Germans rushed heavy reinforcements into the area, upsetting whatever validity Allied intelligence reports may have had. The flooded and snow-covered Alsatian

plains often forced the narrow-tracked tanks of the French to remain on the metalled roads.²¹ In addition, the First Army reached its logistical nadir in many respects during December and January: in varying degrees there was not enough food, infantry, ammunition, trucks, signal equipment, and good quality tanks.

The early performance of Regulating Station 1 disappointed the officers and men of the First Army. When this supply organization was established in November, the French hoped it would bridge the gap between the First Army's requirements in food, especially for the FFI, and the number of American rations received through CONAD. But in December sizable deficits occurred in the delivery of nearly all items (flour, cheese, fats, sugar, etc.). For the month the Army had requested 4,400 tons of food and forage: Regulating Station 1 sent only 1,100 tons. General de Lattre complained to the War Ministry at Paris, "It is apparent that Regulating Station 1 does not have the necessary provisions at its disposal in order to assure the regular supply of French rations which are essential to the life of the First Army." De Lattre went on to add that the problem demanded an immediate solution since additional FFI units were starting to arrive in the zone of his army.²²

Receipts of food and forage from Regulating Station 1 tripled to 3,360 tons in January. But the increase was still not enough to fully support the First Army whose Quartermaster and G-4 Sections had submitted a monthly bid to the War Ministry for 5,500 tons. Again, de Lattre wrote Paris appealing for action. He informed the government that the seriousness of the situation had forced him to authorize his Quartermaster to obtain more food from local authorities--by force if

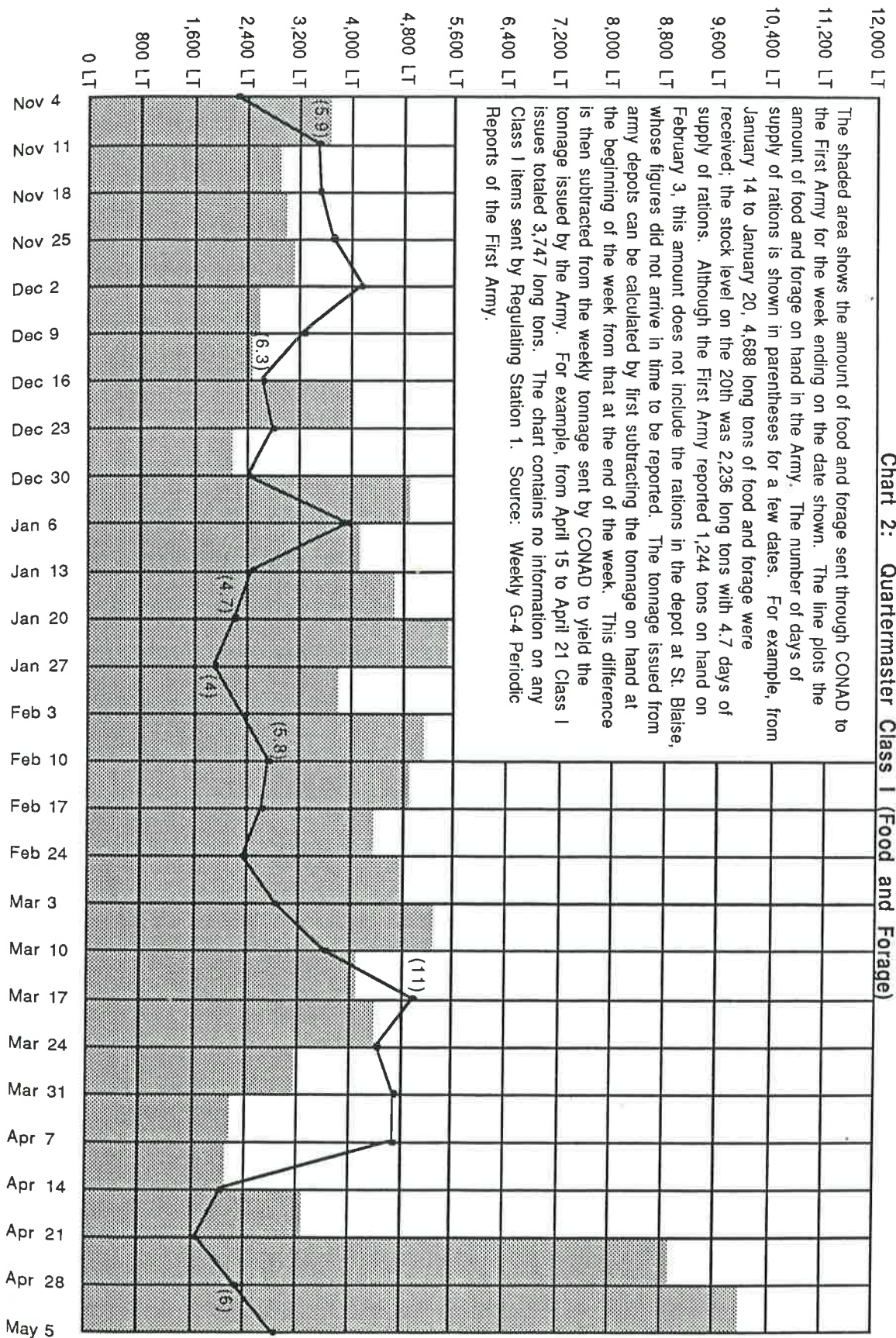
necessary. This harsh and regrettable expediency, he added, was no cure-all since "local resources cannot meet every need."²³

Despite inadequate shipments from Regulating Station 1, the First Army did not suffer a major food shortage. Other sources filled the gap. As mentioned by de Lattre, the local market met part of the demand. German stocks captured during the Army's November advance through southern Alsace proved helpful in getting through the lean month of December. An increase in the supply of U.S. rations in January offset the additional demand occasioned by the arrival of FFI units from Paris. (See Chart 2 on page 80.) With the approval of SHAEF and SOLOC, the First Army's Quartermaster was allocating American rations in late January to about 10,000 French soldiers not included on the U.S.-supported troop list. The high rate at which American food supplies were issued at this time suggests that the French may have made some unauthorized diversions to other FFI units. Though the First Army soldier sometimes found his diet monotonous, by hook or by crook he was almost always given enough to eat.²⁴

The infantry shortage which gripped the North African divisions during the winter did not spring up suddenly overnight. Instead, it had grown steadily since the simultaneous arrival of cold weather and static attritional warfare in late September. Both conditions exacted a heavy toll of front-line combat troops. In a plea for more replacements, General de Lattre wrote President de Gaulle in December that his army needed "8,000 or 10,000 young Frenchmen in order to recover its spiritual equilibrium [équilibre moral] and combat value of the beginning of the campaign." But whatever manpower assistance de Lattre's letter may have prompted, it was not enough; in February the deficit in infantry climbed

Chart 2: Quartermaster Class I (Food and Forage)

The shaded area shows the amount of food and forage sent through CONAD to the First Army for the week ending on the date shown. The line plots the amount of food and forage on hand in the Army. The number of days of supply of rations is shown in parentheses for a few dates. For example, from January 14 to January 20, 4,688 long tons of food and forage were received; the stock level on the 20th was 2,236 long tons with 4.7 days of supply of rations. Although the First Army reported 1,244 tons on hand on February 3, this amount does not include the rations in the depot at St. Blaise, whose figures did not arrive in time to be reported. The tonnage issued from army depots can be calculated by first subtracting the tonnage on hand at the beginning of the week from that at the end of the week. This difference is then subtracted from the weekly tonnage sent by CONAD to yield the tonnage issued by the Army. For example, from April 15 to April 21 Class I issues totaled 3,747 long tons. The chart contains no information on any Class I items sent by Regulating Station 1. Source: Weekly G-4 Periodic Reports of the First Army.



momentarily to 21,000 men or thirty-five percent of its authorized strength of 60,000.²⁵

The FFI personnel who joined the First Army ultimately filled the thinning ranks of the North African divisions. But de Lattre did not ordinarily use the former guerrillas as "replacements" in the normal sense of the term; many FFI commanders did not want to break up their units for this purpose. Instead, the FFI was often integrated into the regular army en bloc, by battalions and regiments. This process was first carried out in September and October when 15,000 metropolitan Frenchmen took the place of an equal number of black soldiers from Senegal, who were unaccustomed to fighting in cold weather. Afterwards, de Lattre did not make many large-scale substitutions until the Colmar pocket was liquidated on February 9; he preferred that the necessary shuffling of troops and exchanging of equipment occur while the First Army was resting behind the aegis of the Rhine rather than fighting in the confusion of battle. The severe infantry shortage was mitigated in March when three FFI regiments replaced three exhausted regiments from North Africa.²⁶

As mentioned by de Lattre in his December 18th letter to President de Gaulle, the replacement crisis adversely affected the First Army's morale or "spiritual equilibrium," to use his more fanciful expression. He explained that the North African soldier felt abandoned by the nation when he saw "his comrades falling around him without even one Frenchman from France coming to fill the gaps . . . in his regiments [my emphasis]." There were other signs of France's indifference towards him, such as the sparse press coverage on the fighting in Alsace and the inadequacy of the supplies from Regulating Station 1. "This country is really too ignorant of the great battle which is taking place on its soil!" wrote Pierre Lyautey in disgust

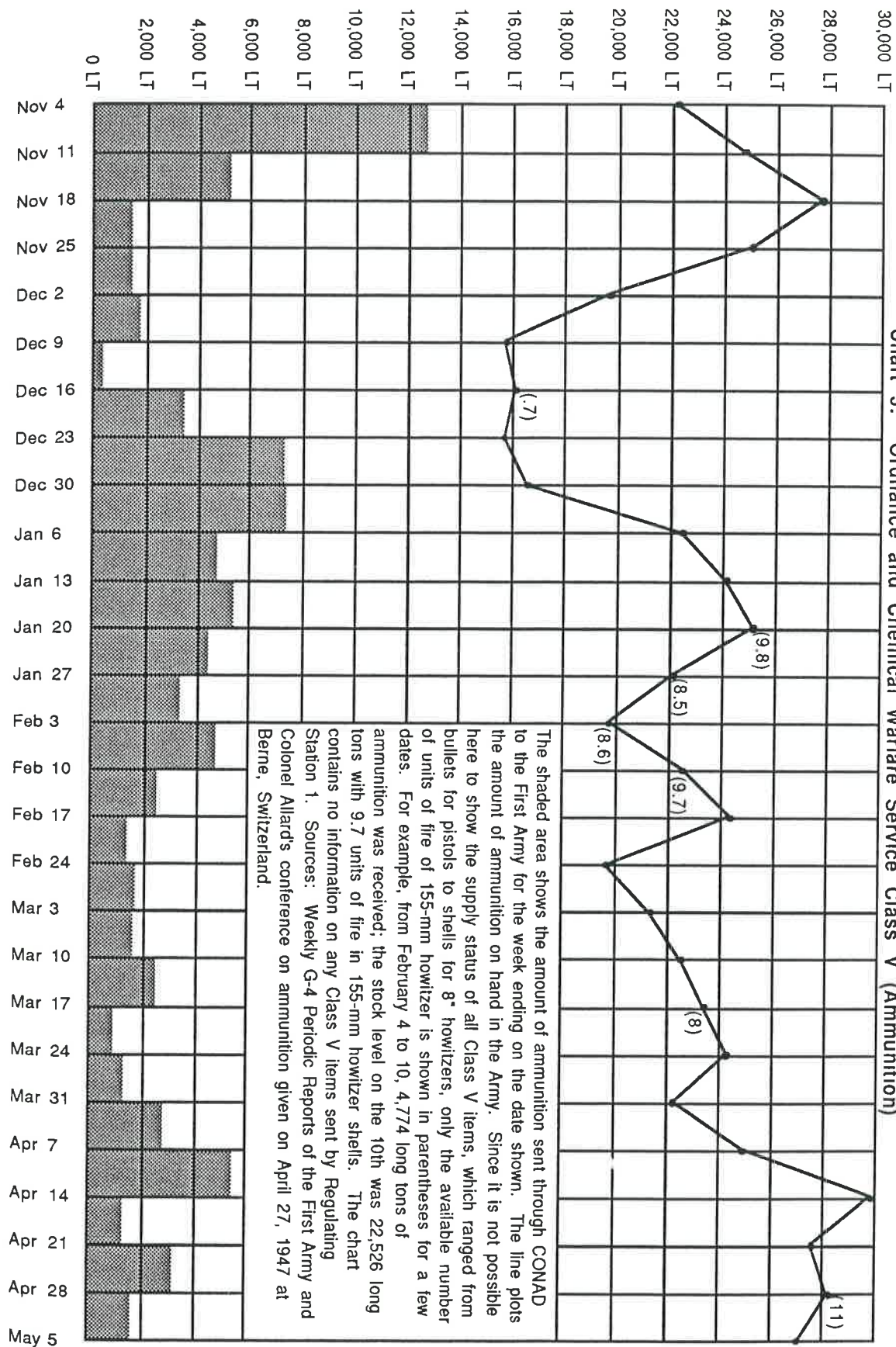
after reading a newspaper from Épinal. Besides the apparent apathy of France, weeks of fighting in cold dreary weather with little rest tested the endurance of even the toughest veterans. Furthermore, if "there is no more important morale factor for combat troops than a good ammunition situation," as a U.S. supply report maintained, then the soldiers of the First Army had good reason to feel discouraged.²⁷

During the entire period in which the First Army reported the stocks in its depots (November 1944 - May 1945), no month showed a lower supply of ammunition than December 1944. (See Chart 3 on page 83.) From the relatively high reserve of 28,000 tons on November 18, supplies plummeted to 16,000 tons on December 9; they remained at that level for the next three weeks. The lack of shells for the 105-mm howitzer, the piece used most frequently in support of combat, was particularly troublesome and forced the First Army's artillery commander, General Chaillet, to set a limit on its consumption at 30 rounds per gun per day or about one-fifth of a unit of fire. (See chapter two, page 34 for an explanation of the term "unit of fire.") The French II Corps used, however, 43 rounds per gun during its attack on the Colmar pocket from December 7 to 14. This expenditure over the prescribed rate and a delay in the arrival of ammunition for the 105's reduced stocks to such a precarious level that offensive activity was halted in the I Corps' sector. The diary of Pierre Lyautey describes the ammunition shortage as seen from the front:

November 30. Our artillery has practically no shells. Specifically, there no longer remains any ammunition for the 105's. The gunners must even refuse interdictory fire. What courage is required of our infantry to advance in spite of everything! . . .

December 6. An unusual sight on the way to Longemer. Since we have no artillery, our TD's [tank destroyer's] have become the

Chart 3: Ordnance and Chemical Warfare Service Class V (Ammunition)



support batteries. They are getting stuck in the mud everywhere, and can only fire from the road

December 17. The 3rd Algerian Infantry Division is stretched along an immense front without any reserves. Moreover, the problem of artillery and mortar ammunition is agonizing. Colonel Dunois hurries some officers to all the depots in order to try, in vain, to find some lots. [A lot was a group of shells of a certain caliber made at the same munitions plant and thus having very similar ballistic properties. To facilitate accurate firing, ordnance tried to supply troops with ammunition of the same lot, which was indicated by a number stamped on the shell at the time of its manufacture.] . . .

December 18. Our battle, on account of the penury of ammunition, is truly like a game of poker. America is not producing enough. Since a year and a half is needed for her to change from a war economy to a peace economy, she is starting her conversion as soon as possible. Because we have no reserves, rumors are starting to circulate. If the Germans strike us with a hard blow, our thin curtain of a front would be quickly pierced and enemy tank raids could go as far as who knows where.²⁸

One of the causes of the ammunition shortage was, as Lyautey noted, a general slackening in American munitions production. As the war turned increasingly in favor of the Allies, U.S. manufacturing firms readied themselves for competition in a civilian economy, where the demand would be for cars not tanks. This trend began in the summer of 1944 as the Allies rolled up an impressive string of victories. With regard to strictly ammunition, the War Department ordered cutbacks in production in late 1943. Congress had pressured the military to take this action on account of the low, and in the end anomalous, consumption rate of the North African campaign.²⁹

While these events were transpiring in the United States, the demand for firepower in Europe increased during the fall and winter of 1944-1945. Combat operations no longer resembled the footrace of late summer but a slugging match instead. Heavy tonnages of ammunition were needed to

reduce the fortifications of the Siegfried line and to throw back the German counterattack in the Ardennes. The inclement weather of this period also played a role in raising ammunition requirements. Overcast skies frequently prevented Allied planes from being used to bomb enemy positions at the front; hence, a greater burden of combat support fell on the field artillery. Low ground fog, common in Alsace during December, made it difficult or impossible to observe artillery fire, forcing gunners to shoot more rounds so as to compensate for inaccuracy. Snowstorms also limited visibility as illustrated by the following anecdote from the journal of Jean Navard, a member of a French tank crew:

January 23. . . . The snowstorm redoubles in violence; now, there is literally a white wall raised in front of us One cannot see ten meters ahead . . . our eyes are popping out of their sockets trying to spot something in this white eiderdown.

"Look there ahead!" cries Gazan. "It looks like a tank."

"Stop!" yells Figaro. "Aim at twelve o'clock."

"Loader, ready."

"Wait. Is it a French or enemy tank? If it is a Boche, we had better fire before he does the same"

Figaro sends an infantry patrol to take a closer look The patrol returns, waving their hands. It is not the Boches, much less a panzer. It is a big tree which has fallen. Phew! . . . We thought it was at no more than fifty meters, in fact it was at over a hundred. . . . Along the entire sector, the artillery grumbles without stopping.³⁰

In such weather, the difficulties of artillerymen, who usually fired at distances well in excess of a hundred meters, may be readily imagined.

Since the bottleneck in ammunition supply existed in the United States, it affected American forces in Europe as well as French. In response to the shortage, SHAEF closely monitored stocks in the theater and in January it set quotas on the number of rounds which the various guns could fire in a day. It restricted, for example, every 105-mm

howitzer to 30 rounds per day, the same limit General Chaillet established for the First Army in December. SHAEF also ordered the army groups to take control of all stocks in army depots on January 1 and to allocated ammunition at ten-day intervals.³¹

In his memoirs General de Lattre claimed that the French were given less ammunition than the Americans. He wrote that the U.S. XXI Corps, assigned to operations against the Colmar pocket in late January, "was provided with a wealth of resources, especially in ammunition, to which the French First Army was not accustomed." To support his contention, he pointed out that during a three-hour bombardment on January 29, the 3rd United States Infantry Division (3rd USID) spent 16,438 rounds of artillery; on the other hand, the French 9th Colonial Infantry Division (9th DIC) fired a meager 1,491 rounds of 105-mm howitzer during the entire day, only 9 less than it had been allotted.³²

But the example presented by de Lattre is hardly sufficient to prove his claim of unfair treatment. While limiting himself to an accounting of the expenditure of 105 in the 9th DIC, he did not clearly do the same in the case of the 3rd USID. The 16,438 rounds cited above may well include those fired by other guns such as 60-mm mortars, 81-mm mortars, 155-mm howitzer, etc. The French general was selective in presenting his evidence too. Although the 9th DIC was indeed given only 1,500 shells of 105, the 2nd Moroccan Infantry Division received 4,000 of the same caliber. Perhaps the greatest weakness in de Lattre's argument is the short time frame in which he chose to make his comparison: a single day. A longer period would have been more convincing, because the amount of ammunition used by a military unit varied from day to day; for example, the French I Corps fired about 3.3 times more ammunition on January 20

than it did on a daily average from January 21 to February 5. If the First Army was truly poorer in ammunition than the American armies, then General de Lattre did not marshal his evidence clearly and in sufficient quantity to prove it.³³

Besides infantry and ammunition, the First Army did not have enough trucks in December and January. Although the Americans experienced a shortage in trucks also, the problem was more acute among the French. The First Army had arrived in southern France without its full allotment of trucks, and many of those which it brought had been used in Italy or North Africa. These worn vehicles increasingly broke down in the fall and winter. French ordnance units, weaker in number and skill than the Americans, were unable to repair them in a timely manner. Both national forces suffered from shortfalls in the supply of spare parts and replacement vehicles; but with regard to the latter, the gap was wider in the First Army. As a result of these difficulties, the commander of the 3rd Algerian Infantry Division, Major General Augustin Guillaume, wrote on January 11 that his unit "has at its disposal one third of its organic vehicles: two thirds are missing or under repair."³⁴

The severe shortages of initial equipment which had plagued General Juin's Expeditionary Corps in Italy had eased by the time of DRAGOON. Nevertheless, U.S. Seventh Army inspections prior to the invasion revealed many items missing from French units. Trucks were especially deficient among service troops. Some of the deficits were filled while others remained. In a letter to General Eisenhower, dated January 28, 1945, French Army Chief of Staff Roger Leyer cited the lack of initial equipment as a principal cause of the crisis of matériel then facing the First Army.³⁵

Many trucks in the First Army already had extensive mileage on them before DRAGOON began. Their use as long-distance carriers in the first two months of the invasion turned their odometers close to the regulation limit of 50,000 miles. During the fall and winter, they continued to receive rough treatment, though less on account of traveling long distances. Mud ruined brake linings and caused engines to overheat. Snow and ice made driving hazardous, especially in the Vosges Mountains.³⁶

French truck drivers added to the wear and tear. According to one American observer, most were North African natives who "did not understand proper maintenance of vehicles." They neglected to check the level of their oil and the pressure of their tires. When it rained or snowed, the inexperience and incaution of the North Africans produced numerous accidents. Still, their record was not greatly inferior to the Americans. One U.S. officer moaned that frequently in his nation's army "the least capable individuals are assigned as moto[r] vehicle drivers." Like their North African comrades, the Americans often failed to perform timely first and second echelon maintenance.³⁷

Repair work at the third and fourth echelons was clearly poorer in the First Army. Here was the inheritance from the agrarian, nomadic society of North Africa and from the French High Command with its emphasis on combat. In December and January, French ordnance units struggled in vain to repair the growing number of deadlined vehicles. Their failure was attributable in part to a lack of personnel, but not of effort. While American mechanics worked eight hours a day, the French spent twelve to fifteen hours on duty. In his January letter to Eisenhower, General Leyer--while requesting more equipment be sent the First Army--asserted that the repair work of French ordnance units matched that of American.

But more convincing evidence indicates otherwise. Lieutenant General Aimé de Goisland de Monsabert, commander of the French II Corps, wrote General de Lattre on January 11: "It is essential to reinforce the repair units with qualified workers destined to replace the so-called mechanics trained for a few weeks in North Africa."³⁸

A shortage of spare parts presented another obstacle to clearing ordnance shops of deadlined vehicles. In one instance 517 trucks and trailers out of 793 awaiting repair from the Army Transportation Service could not be fixed because the parts needed were unavailable. This difficulty was not confined to the French alone; the Americans did not have enough spare parts either. Some of the more critical items in the theater were tires, gaskets, rings, pistons, axles, transfer cases, and steering assemblies. The scope of the spare-parts shortage was greater than that suggested by the size or triviality of many of the items. Speaking for the supply services in general as well as his own, U.S. Brigadier General Hugh Rowan of the Chemical Warfare Service stated that the "lack of spare parts was the outstanding failure of the American supply system."³⁹

The supply of vehicles to replace the First Army's losses was insufficient. Part of the problem stemmed from a shortage in the theater, which was due in turn to an unexpectedly high mortality rate in all the armies; by the end of November, truck reserves in Europe had dwindled to practically zero. In the First Army, the assignment of equipment to the FFI, which apparently included some trucks, diverted badly needed replacements from the North African divisions. The French aggravated their own shortages by not evacuating badly damaged matériel or salvage to the communications zone; this was detrimental because CONAD based supply needs partly on the number of such items which it received.

Noticing few replacements for equipment evacuated earlier, French soldiers at the front preferred to keep damaged trucks as a source of spare parts. Thus, while CONAD received on the average forty freight cars of salvage from the Seventh Army each week, only three came from the First Army.⁴⁰

Radios were another item which were probably kept in the Army instead of being sent to CONAD for salvage. Various radios and their corresponding spare parts were invariably present on the First Army's list of critical items. The sets in greatest need in December and January were SCR-536's (Set Complete Radio-536, portable AM handie-talkies used for communication within infantry companies), SCR-510's (FM radios found in vehicles), and SCR-511's (portable AM guidon sets used within infantry battalions). More repairmen were also needed, and a report from the French 1st Armored Division recommended raising its own number by fifty percent. On one occasion, a lack of radios in operating condition nearly forced a tank platoon to resort to flags for manoeuvre.⁴¹

Other items of signal equipment were in short supply besides radios. Batteries were always found on the critical list though deliveries improved in January. CONAD partially met the demand for one battery, the BA-39, by producing them at its signal depot in Auxonne near Dijon. Of all signal items, the most persistent shortage existed in light-weight assault wire, W-130. Army stocks on December 9 showed only 58 miles available, half of the length authorized to be on hand in an infantry regiment.⁴²

The lack of radios, batteries and assault wire never reached the same level of urgency as that of trucks, ammunition and infantry. The operational difficulties imposed by the last three are sprinkled throughout the memoirs and correspondence of the principal French commanders. It is

only in the supply reports of signal officers that statements appear such as "an alarming shortage which needs an emergency settlement" or "likely to upset seriously the current operations."⁴³

The First Army lost many armored vehicles in the fighting around the Colmar pocket. When the Germans were finally pushed east across the Rhine in February, the 1st and 5th Armored divisions had less than half their normal number of tanks. The way in which General de Lattre used the two divisions contributed to the high losses. He dispersed their tanks throughout the Army so they could provide close covering fire for infantry regiments. He took this action because his troops did not have enough artillery support on account of the ammunition shortage. This tactic frequently placed French armor within the range of German eighty-eights and Panzerfausts.⁴⁴

The greatest threat to French tanks came from German tanks. The thick, sloping armor and long-barrelled guns of the Panthers and Tigers outclassed the American-made Shermans. Jean Navard of the 1st Armored Division wrote: "We are fighting under the conditions of a pot of clay versus a pot of iron. . . . If only we had some tanks capable of challenging the Panthers," he wished.⁴⁵

It was the same wish of General de Lattre and other French military leaders. They wanted to receive some of the newer American tanks mounted with high-velocity 76-mm guns. But by the end of January 1945, none had arrived for the First Army. When the Seventh Army received a shipment of 76-mm gun tanks, the French felt slighted. The Weekly G-4 Periodic Report of the First Army for January 21-27 records their disappointment:

The First Army has learned that new tanks have now been put into operation in the Seventh Army The tanks in question are M4A3E8's, having wide tracks (especially valued in snow or mud) and high initial-velocity guns (with a muzzle brake).

It [the First Army] has also learned that the difference between Ordnance Class II and IV [see chapter one, pages 25-26] tonnages for the period January 20-30 was due to the fact that such tanks were sent to the Seventh Army. It has even been said that in fact this difference would benefit the First Army since they [the tanks] would come to the Seventh Army as replacements "for older tanks" which would be given the First Army.

The First Army--which suffers greatly from having only tanks inferior in armament, armor and maneuverability to German tanks--would be surprised to see itself thus considered as the recipient of tanks judged too old for the other armies

The armored divisions of the First Army have shown that they know how to use their equipment. They themselves would also like to receive a little modern equipment.⁴⁶

And they did, but not before they would be called upon to help reduce the Colmar pocket.

On the evening of January 12, Brigadier General Jean Valluy, Chief of Staff of the First Army, met with Lieutenant Colonel Allard, de Lattre's trusted G-4. "What is the shortest time period," asked Valluy, "in which we can go over to the offensive on the front of the I Corps?" Allard was then informed that before the attack could begin, the 4th Moroccan Mountain Division (4th DMM), presently in reserve around Fougerolles, would need to be moved to the front near Thann. At the same time, Lieutenant General Emile Béthouart, the I Corps commander, wanted six units of fire in his depots for his four divisions.⁴⁷

With these given conditions Allard started to calculate the answer to Valluy's question. He noted first that the problem was essentially one of transportation. The Army Transportation Service had at this time 9 1/2 truck battalions with a theoretical strength of 1,672 vehicles. But in

reality, only 1,280 existed, and of this number 500 were awaiting repairs, leaving therefore 780. From this last figure Allard subtracted the 100 vehicles then attached to the II Corps and the nearly 200 vehicles constantly needed for daily maintenance activities such as moving supplies from railheads to depots. Allard was now down to 500 trucks; these constituted his available force [masse de manœuvre].⁴⁸

The French G-4 next turned his attention to transporting the 4th DMM. This mountain unit had a mule train which would necessarily require four days to walk from Fougerolles to Thann. With this information Allard now knew the shortest time in which the 4th DMM could be ready for action: four days. In order to move the rest of the division in this same time, he would have to supplement the motor transportation of the 4th DMM with 200 of the Army's trucks. The movement of the division would begin on January 14 and last through January 17, thus, the 200 trucks could be ready for a new assignment on the 18th.⁴⁹

Allard next examined the status of the "staples of combat," that is, food, gasoline and ammunition. The normal requirements of each were transported to advance depots by vehicles from the services concerned (Quartermaster, Gasoline, Ordnance) and perhaps by some of the 200 trucks from the Army which were set aside for maintenance duties. There was no need to augment forward deliveries of food from rear army depots since it was consumed at a uniform rate. Gasoline, on the other hand, was different. To be in a good position to exploit a breakthrough, Allard had to raise the stocks of the I Corps from one or two days of supply to three or four. He therefore needed to know how many trucks he would have to loan the Gasoline Service in order to reach this stock level in four days, still the only definite time limit. He calculated the answer to be 100 trucks.

Like the vehicles loaned the 4th DMM, the 100 would return to the Army Transportation Service on January 18.⁵⁰

The last item considered was ammunition. Since the I Corps maintained two units of fire in its depots, Allard had only to determine the number of days required to move four units of fire for four divisions. He computed the weight of this ammunition to be 7,000 tons. The lifting capacity of his remaining 200 trucks was 700 tons per day to which was added 500 tons per day provided by vehicles of the I Corps. During the irreducible four-day limit from January 14 to 17, Allard discovered that only 4,800 tons of ammunition could be moved, 2,200 tons less than the desired amount. More than four days would be required to ready the I Corps for combat. On the fifth day, the 18th, the 300 trucks loaned to the 4th DMM and the Gasoline Service would be available again to the Army Transportation Service, boosting its lifting capacity from 700 to 1,700 tons per day. This 1,700 plus the 500 from I Corps would be just enough to transport the remaining 2,200 tons of ammunition on the 18th.⁵¹

Allard now had the answer to Valluy's question. He told the Chief of Staff that if logistical movements began on the 14th, they could finish on the 18th; the I Corps could therefore attack on the 19th. Allard suggested, however, that D-Day be postponed for twenty-four hours to the 20th to allow for any unexpected difficulties. His advice was taken: the First Army's offensive to eliminate the Colmar pocket would begin on January 20.⁵²

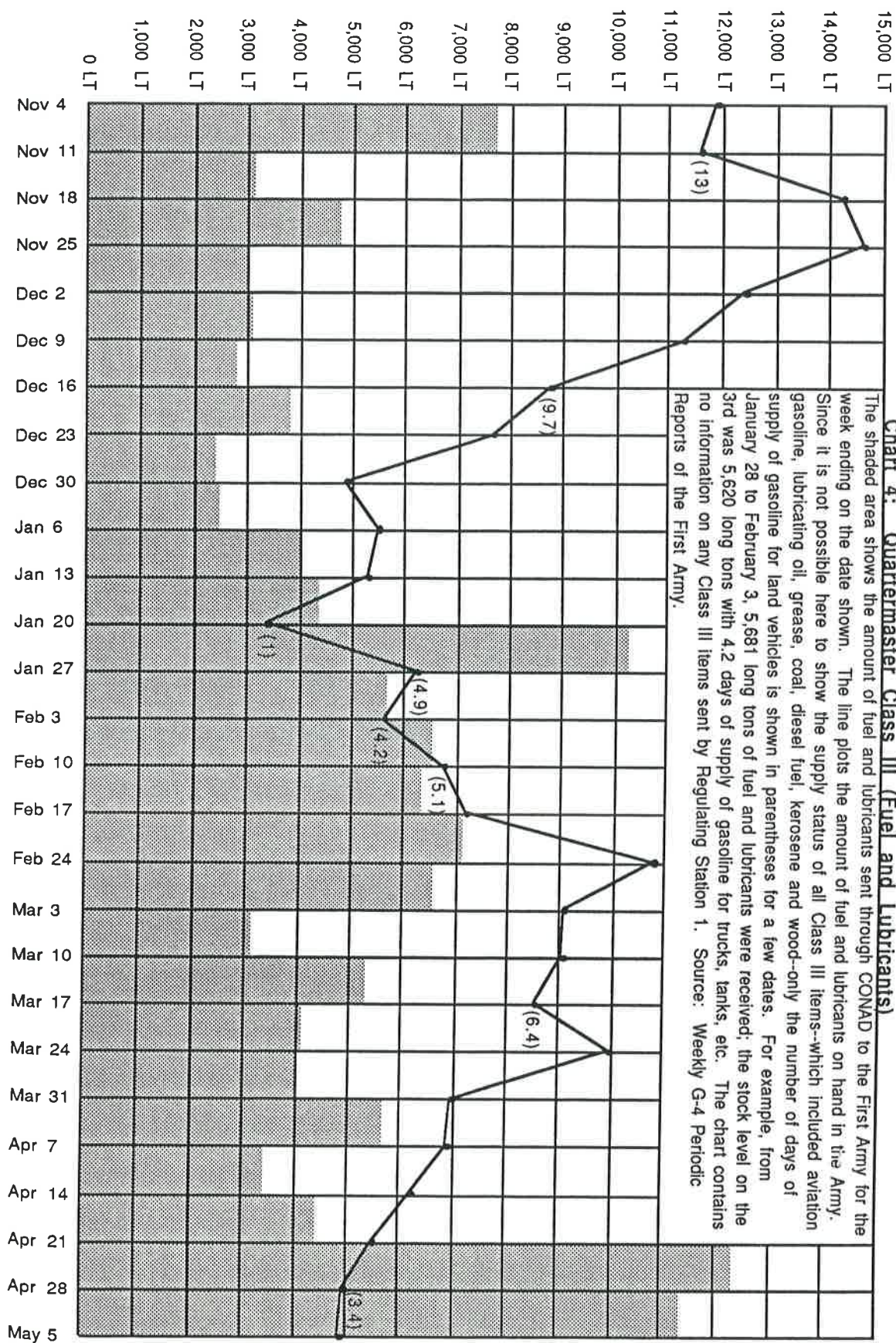
As the buildup of supplies and troops began, Colonel Allard learned he would be unable to provide the I Corps with six units of fire. The problem did not involve transportation but was caused by a simple lack of ammunition. January's increasing stock level had led him "to hope for a

generous allocation" from the Sixth Army Group, which still controlled army reserves. But General Devers remained concerned about the theaterwide shortage; on the eve of the offensive, he refused to give the First Army more than three units of fire for its seven divisions for the period January 20-31. These three along with the one-and-a-half saved by the First Army from previous allocations permitted Allard to place only four units of fire in the depots of the I Corps.⁵³

More troubling than the status of ammunition was that of gasoline. Fuel deliveries from CONAD slowed in mid-January, causing army stocks to fall: from 4.5 days of supply on the 11th to 3.6 on the 13th to 1.9 on the 16th. On January 18 depots held only a single day of supply, about 220,000 gallons (900 tons). (See Chart 4 on page 96.) While the First Army's chief gasoline officer, Major Cartier, alerted the communications zone, Colonel Allard wondered whether he should recommend a postponement of the coming offensive. But before he decided, a large shipment of gasoline was announced from Dijon. By January 27 the crisis had passed with a five-day supply on hand.⁵⁴

The gradual dip in the First Army's stock of gasoline illustrates the importance of maintaining a healthy reserve. Had the Army operated on a hand-to-mouth basis, every slowdown in supply would have instantly produced an emergency and if prolonged could have resulted in a disaster. Several threats existed to a steady flow of supplies along lines of communications: sabotage by partisans or paratroopers, attack from the air, and weather. The previous two inconvenienced the Allies very little. Weather, however, sometimes upset supply operations, and it was responsible for the decline in gasoline deliveries to the French. The bitter

Chart 4: Quartermaster Class III (Fuel and Lubricants)



January cold interrupted normal rail and pipeline traffic. The Doubs river froze and blocked barges carrying gasoline from CONAD.⁵⁵

Despite the weather, the French criticized CONAD's handling of the fuel problem. The First Army's G-4 Periodic Report for January 14-20 noted that for several days messages were sent to CONAD about the low level of gasoline; yet, the advance section "did not attempt on its own initiative to remedy the situation, and did not even tell the First Army if scheduled deliveries or its own stock would permit any improvement." The G-4 report did not accuse the Americans of any discrimination in this instance. This silence may have been due to the fact that the Seventh Army was experiencing similar difficulties; on January 13 its fuel reserve dropped to one day of supply.⁵⁶

The report was not completely silent on the subject of discrimination. It related that on January 21 the First Army asked CONAD for twenty trucks in order to entrain Hospital 414 at Dole for movement to Épinal. The American command turned down the request. But less than three weeks earlier, CONAD had sent at least two hundred fifty 2 1/2-ton trucks to the Seventh Army, following the latter's request for all such vehicles. "The First Army," the report states, "takes note of this difference in treatment, incompatible with the often repeated assurance that CONAD would meet the needs of the Sixth Army Group without making any distinction between the Seventh and First Army."⁵⁷

The First Army was not alone in criticizing the communications zone. It was a time-honored custom for armies to complain about logistical support from the rear. A supply report from the U.S. First Army, also fighting in Europe, noted on one occasion: "The operations will be a success providing the Communications Zone has the ability and is willing

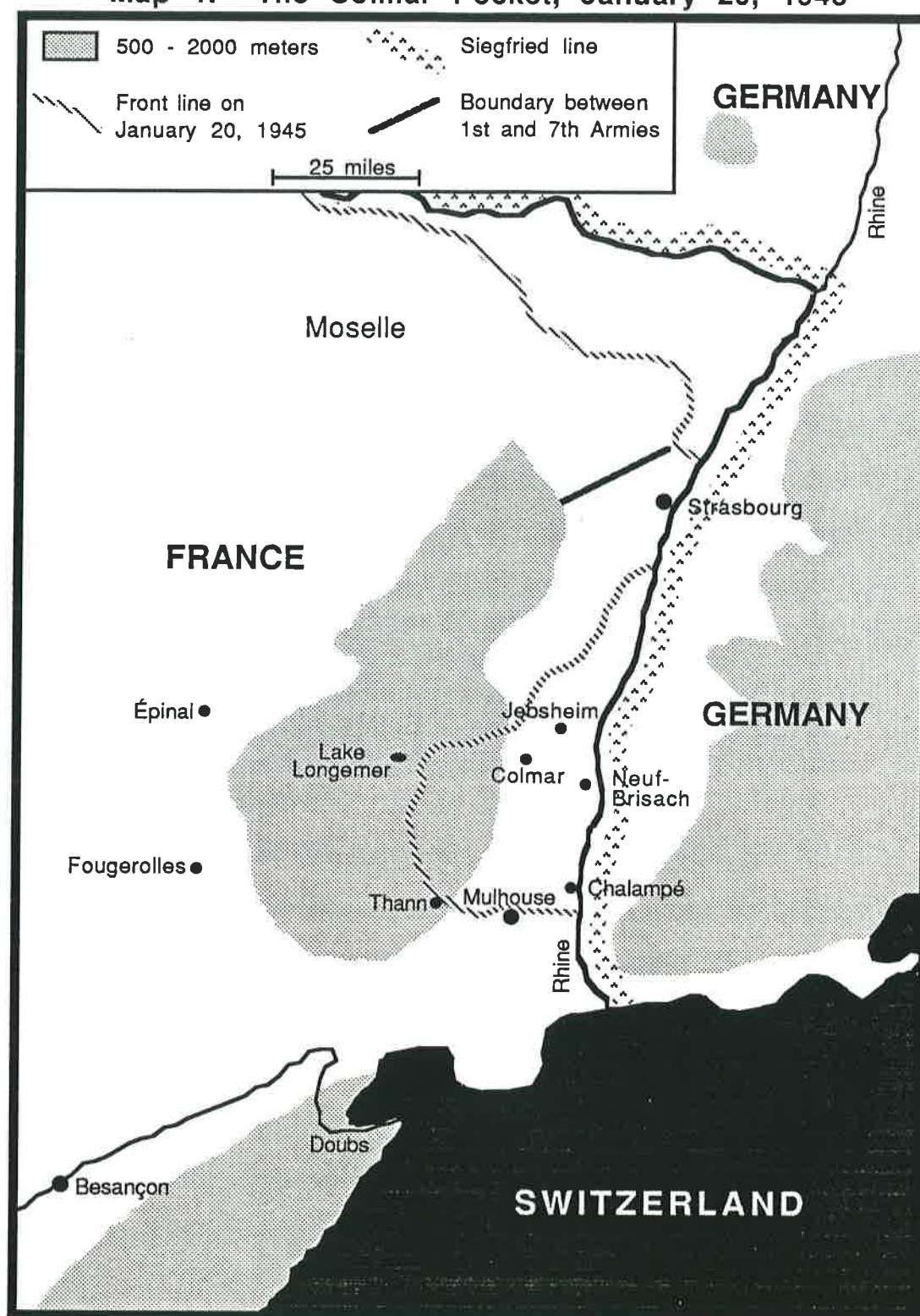
[my emphasis] to support the combat forces." It is therefore difficult to determine whether French complaints against CONAD were due to traditional front-line grumbling or a general pattern of discrimination or both.⁵⁸

However imperfect supply was on the French side, it was unquestionably worse on the German. Gasoline, in short supply in the Wehrmacht during the retreat from France, remained so until the end of the war; when the U.S. Seventh Army entered Strasbourg in late November, it captured many enemy supplies including food and ammunition, but no gas. In January the Allies estimated that the eight German divisions in the Colmar pocket were down to 6,000 men apiece, forty percent of the authorized strength of a French division. Furthermore, according to General de Lattre, the Allied units which ringed the salient enjoyed nearly than a three to one superiority in artillery pieces, and the First Army commander should have added that the Germans were limited to just 15 rounds per gun each day. All French or even American complaints about their logistical condition must be read in the context of the German situation.⁵⁹

With Hospital 414 at Dole, with gasoline stocks still low and without six units of fire--the French I Corps attacked the Colmar pocket from the south on January 20. Three days later the II Corps struck from the north. Both drives were aimed at Neuf-Brisach and Chalampé, the two cities on the Rhine through which the German forces received most of their supplies and reinforcements. (See Map 4 on page 99.)⁶⁰

Progress was slow for the First Army. After six days of exhaustive fighting in temperatures as low as -13°F (-25°C), the French I Corps had advanced barely two kilometers. The French II Corps had gone a little

Map 4: The Colmar Pocket, January 20, 1945



farther; it had reached Jepsheim by January 26, 10 kilometers from its starting line on the Fecht river. Still, the gains of the II Corps were not wholly satisfactory, and General de Lattre asked for and received the U.S. XXI Corps to reinforce operations on the northern side of the pocket.⁶¹

While the XXI Corps moved from the Moselle region to near Colmar, the First Army continued to hammer away at German defenses. But ammunition was running short. The I Corps had fired one unit of fire on the first day of its attack and six-tenths of a unit each succeeding day immediately thereafter. De Lattre was forced to ask the Sixth Army Group for additional ammunition. General Devers consented but very reluctantly. He told the French commander to reduce his Army's "terribly excessive consumption." In another message to de Lattre, Devers commented:

I thought the ammunition placed initially at your disposal was sufficient to see this operation through to a successful conclusion, on the condition that it was used with wisdom and regard to the seriousness of the situation in our supply of ammunition. . . . The consumption of ammunition is justified only by German corpses or territory gained. I am counting on you to obtain these results.⁶²

The turning point in the battle occurred on January 29. On that date the XXI Corps went into action and pushed its way across the Colmar canal, the last major obstacle barring the road to Neuf-Brisach. The German generals now urged a withdrawal from Alsace to the safety of the Rhine. But Hitler, never one to order a "premature" retreat, balked at their requests until February 3 when he at last yielded to the inevitable. Within a week the Germans had scampered across the upper Rhine, blowing the last bridges behind them at Chalampé. The Colmar pocket had ceased to exist.⁶³

With the Allied victory, the testy tone of the messages passing from Devers to de Lattre disappeared. "It is my great pleasure," wrote the Sixth Army Group commander, "to commend you highly for the magnificent qualities of leadership of which you have given proof as General Commanding the French First Army in the reduction of the Colmar pocket." To the French and American soldiers who had fought the battle, Devers sent his congratulations. He reminded them, however, that the war was still not over and exhorted them to one final effort, "I say to you: 'Forward to Germany!'"⁶⁴

Chapter Five
The German Campaign: Buildup and Blitzkrieg
(February - May 1945)

With the defeat of the Germans in the Ardennes and at Colmar, the Allied armies were poised to invade Hitler's expiring Third Reich. To better support coming operations, CONAD moved its headquarters closer to the front from Dijon to Nancy in mid-February. Part of Base 901 followed CONAD to the north; the rest remained at Dijon where a new American supply organization, Burgundy District, opened its headquarters as CONAD was leaving. Under the operational orders of General Wilson at Nancy, Burgundy District managed CONAD's rear depots.¹

February also saw SOLOC disband with General Larkin moving to COMZONE ETOUSA at Paris. This organizational development led to a crisis in the command of Base 901. According to Circular Number 14 issued by SOLOC on February 10, General Granier, who had served with Larkin for the past two months, would return to CONAD as deputy commander. Wilson's present deputy, Colonel Albord, was to step aside and take charge of a French liaison section. But Albord refused to accept the post. On February 12, he wrote General de Lattre requesting a transfer to a new assignment.²

Tension developed between Colonel Albord and General Granier. The Colonel's unwillingness to accept his new position annoyed his superior. Granier later reported that he talked with Albord on several occasions "so as to try to lead him to a clearer and healthier concept of his duties.

Colonel Albord never had but one response . . . 'I do not presently have a position worthy of my past and my military abilities.' The response reveals the man," judged Granier. Camaraderie was not helped by a letter from the General to the Colonel which contained the subtle gibe, "I am in the habit of obeying my superiors."³

As relations between the two French officers deteriorated, a new controversy erupted. On or about March 4, General Wilson wrote de Lattre complaining that Granier had frequently interfered with his work as commander of CONAD. Wilson asked de Lattre to relieve Granier and to appoint another officer to head Base 901. By April 1 Colonel Henri Coudraux had replaced Granier, who in turn was given the top post at Mission de Réarmement, the organizational successor to SCAMA (see chapter one, page 17). Colonel Albord was placed at the disposal of the War Ministry.⁴

Granier believed his troubles with Wilson were related to those with Albord. In two reports addressed perhaps to posterity, he wrote that Albord had long coveted the position of Commanding General, Base 901. To reach this goal Albord unscrupulously undermined Wilson's confidence in him [Granier] "through a series of well-calculated maneuvers." Though little is known of Albord's version of the dispute, the subsequent assignments of the two officers suggest that the French High Command may have sided more with Granier.⁵

More was involved in the conflict between Granier and Wilson than any machinations on the part of Albord. The two generals disagreed on the role of the commander of Base 901. Wilson believed that he alone as head of CONAD was responsible for supplying the First Army from U.S. sources. He

considered Granier's contacts with and instructions to the French service chiefs integrated in CONAD as interference.⁶

Granier, for his part, recognized Wilson's preeminence in the area of American supplies. But he maintained that it was his duty to meet with the French officers at CONAD in order to be informed about the supply status of the First Army. Wilson, he suspected, saw this liaison as an unwelcome attempt to make sure that the First Army was treated fairly. Moreover, Granier believed, as he wrote de Lattre: "In the interest of maintaining French sovereignty, I can not accept that the Commanding General, Base 901 . . . needs the authorization of the Commanding General, CONAD . . . in order to convoke the French service chiefs of the Base." In the opinion of some American military leaders, the French were sometimes too preoccupied with this issue of national integrity and honor, occasionally to the point of being peevish.⁷

At the front the monthlong quiet in the First Army sector following the Battle of Colmar contrasted with the disputes in the rear. From Strasbourg to Switzerland contact with the enemy was severed by the Rhine river. German artillery fire and raiding parties occasionally interrupted the calm. To discourage the raids and more serious attacks, General de Lattre requested CONAD to deliver field-fortification supplies and 50,000 anti-personnel mines. Since its stock of mines was low, CONAD borrowed many from the Seventh Army and rushed them by special convoy to the First Army. This incident shows that withdrawals from the depots of a certain army did not always correspond to use by that same army.⁸

Behind a barrier of water, mines, concrete and barbed wire, the First Army rested and prepared for the final offensive against Germany. The rail

net was extended in Alsace and there was a buildup of all army stocks. With the prodding of the Americans, the French took steps to better the repair work of their ordnance units. In addition, the French High Command used the First Army's remaining FFI personnel to fill deficits in the North African units and to create a new division, the 14th Infantry. By the end of March, General de Lattre's forces were again ready to take the field.

Immediately after the Battle of Colmar, the French urged the U.S. Military Railway Service (MRS) to speed rehabilitation of the rail line Lure-Belfort-Mulhouse-Colmar. Winter weather had slowed repairs on a blown tunnel at Champagny and a damaged viaduct at Dannemarie. Rail traffic was finally cleared to Mulhouse on February 17 and to Colmar two weeks later. On the evening of April 1, the first locomotives from southern Alsace rolled into Strasbourg to the delight of General de Lattre. He wrote President de Gaulle that Strasbourg would make an excellent railhead for his Army when it pushed forward into the Black Forest and Swabia.⁹

French supplies from Regulating Station 1 reached their highest level in February. First Army Quartermaster Benoiton reported surpluses in several important items such as flour, tobacco, wine, butter and oil. Yet at the same time sizable deficits existed in potatoes, meat, cheese and forage for animals. Any hopes for continued improvement were dashed in March as deliveries dropped off in the middle of the month. Though Regulating Station 1 turned in a comparatively good performance in April, it was still not able to meet the food and forage requirements of the First Army. As a result, local supplies, captured enemy stocks and U.S. rations continued to cover many deficits in quartermaster items from French sources.¹⁰

Meanwhile, the First Army's stock of American supplies rose steadily after January. The G-4 section recorded 48,700 tons of all items on hand on March 24, up from 31,400 tons on February 3. (See Chart 5 on page 107.) The increase was due largely to low consumption as the Army engaged in little combat during this period. In the closing weeks of the war, stocks remained relatively high at around 47,000 tons.¹¹

Beginning in February there was a notable improvement in the availability of ordnance equipment. Previously, the First Army had operated with a very small reserve. (See Chart 6 on page 108.) On January 20, for example, there was just one serviceable tank in the Army's reserve stocks. French military authorities contacted Sixth Army Group headquarters and SHAEF at this time, asking for an increase in deliveries of tanks, trucks, spare parts and other ordnance items. The Americans complied with this request. From February through April, weekly receipts of ordnance matériel averaged 1,700 tons, nearly double the rate of the three preceding months. On April 28 the First Army had fifty tanks in operating order in its reserve.¹²

From the top of the military hierarchy to the bottom, the French were pleased with the increased flow of equipment into their depots. General de Lattre wrote Sixth Army Group commander Devers on February 15:

I am happy to see the substantial results obtained by your intervention and I am anxious to thank you. The delivery of American vehicles (tanks and trucks) is presently under way and is filling the most critical deficits Allow me to tell you that your promise to issue modern matériel as soon as possible to the French army has kindled great hope in the units under my orders.¹³

Among the combat vehicles sent in February were tanks mounting 76-mm guns. They were a welcome sight for Jean Navard and other French tankers:

Chart 5: Classes I, II, III, IV, V (Total)

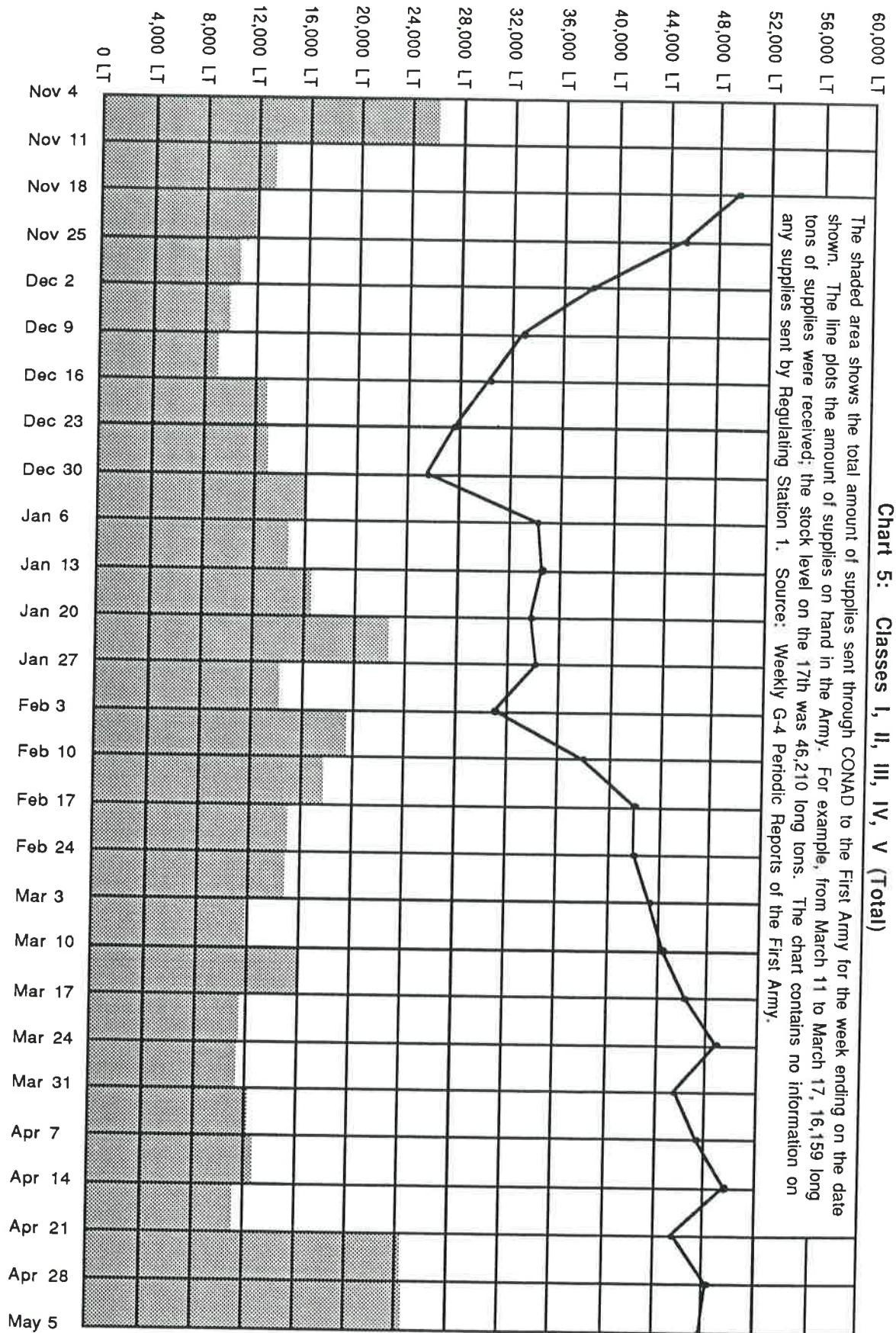
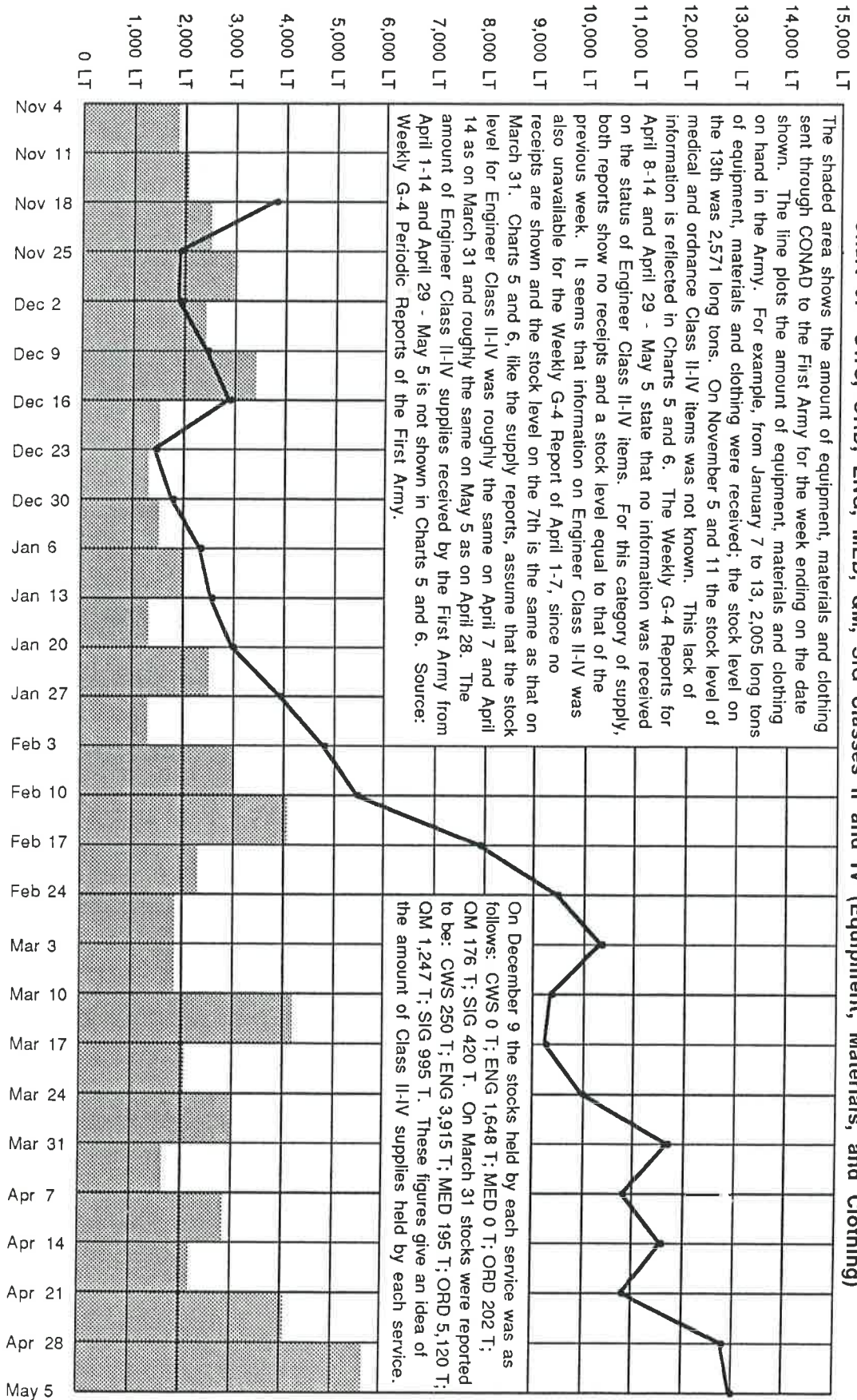


Chart 6: CWS, ORD, ENG, MED, QM, SIG Classes II and IV (Equipment, Materials, and Clothing)



The matériel has arrived, it is magnificent, brand new and above all more powerful than our old tanks. There are some M4A1 Shermans armed like tank-destroyers with a long 76-mm gun. With such an arm we can nearly rival the enemy tanks; with our 75-mm toys we were a joke. . . . A bunch of other improvements permit greater comfort and increased combat potential.¹⁴

The Americans did not, however, send the French very many tanks with 76-mm guns. The First Army counted only 30 in its total medium tank force of 344 in late April; by this time over forty percent of the medium tanks in the American armies carried 76's. With regard to light armor, General de Lattre's troops did not receive any of the new M24 Chaffees which started to arrive in Europe in December 1944. Instead, they continued to use the less powerful M3A1, M3A3 and M5A1 Stuart tanks. In general, the French lagged a step behind in the quality of the armored vehicles available to the Americans, who were themselves a step or two behind the Germans. Fortunately for the Allies, their superiority in quantity more than offset their disadvantage in quality.¹⁵

In return for the increased numbers of trucks and tanks being sent the First Army, the Americans wanted the French to improve their capabilities in repairing ordnance equipment. De Lattre informed Devers in mid-February that for this purpose the First Army had recently recruited 1,200 "specialists," to use his term, and negotiations were in progress to hire more civilian laborers. To enforce the echelon system of repair, "orders had been issued," wrote de Lattre, "to hasten the evacuation of unserviceable matériel to the Base in the briefest time."¹⁶

The success of these measures was mixed. In spite of orders, the evacuation of severely damaged equipment did not increase. On the other hand, third and fourth echelon repairs "improved and . . . became quite satisfactory," reported U.S. liaison personnel. They attributed this

progress to the experience gained by French ordnance troops during the campaigns of 1944-1945, not to the influx of any additional personnel.¹⁷

The French also took steps to assure the upkeep of vehicles and weapons used by the FFI. Already by February, the Ordnance Section had contracted with civilian garages to help maintain the FFI's disparate park of trucks and cars. Five new ordnance units were formed from 1,100 FFI soldiers. Perhaps some of these were the "specialists" to whom de Lattre referred in his message to Devers. In any case, their numbers boosted the effectives of the Army's Ordnance Service to 8,400 men. But by American standards, the First Army still lacked roughly 5,000 ordnance troops to support its seven North African and two FFI divisions.¹⁸

The FFI divisions, the 27th Alpine Infantry and the 14th Infantry, were not maintained from U.S. sources on a regular basis. The Americans continued to limit the vast majority of their supplies to the units rearmed in North Africa. The 27th Alpine and its attached support units were made up of 21,000 FFI troops from the First Army. It fought with mostly French equipment, receiving a little gasoline and ammunition through Delta Base Section. After its activation in November 1944, the Division conducted mostly defensive operations along the Franco-Italian border and had little contact with the bulk of the First Army. On March 1 the 27th was removed from the command of General de Lattre, who was always more preoccupied with events to the north.¹⁹

FFI forces of the First Army also constituted much of the 14th Infantry Division. Under the command of Brigadier General Raoul Salan of subsequent renown, the 14th was organized in February and March while the Army rested behind the Rhine. Its equipment, like that of all FFI units, was both meager and multinational. Having few trucks, the men traveled

by foot. The British supplied most of the ordnance matériel, such as the dozen Cavalier tanks of the 12th Regiment. Search parties working around Colmar and later in Württemberg provided captured German equipment. In the war's final month, the 14th Infantry performed rear guard duties for the North African divisions which remained the cutting edge of the First Army.²⁰

Besides the formation of the 14th Infantry Division, the French High Command used the FFI of the First Army for other purposes. The North African divisions, in need of fresh infantry, absorbed many of the former guerrillas. At SHAEF's request the French organized other FFI units into light security battalions to protect lines of communications. Although SHAEF allocated British equipment to these battalions, it refrained from supporting them with U.S. service troops.²¹

In late March the First Army was like a tightly compressed spring ready to lunge forward into Germany. All divisions were fully rested and sufficiently manned with depot stocks at their highest level since November 1944. Various obstacles, however, blocked the road to conquest in Germany.

British and American military leaders did not consider the sector held by the First Army to be a favorable and important pathway into Germany. The terrain was thick with forests, hills and mountains. The Rhine river and the Siegfried line came together to form a single, solid barrier of defense, instead of two separate and hence weaker obstacles. Moreover, there were few geographical points of strategic value ahead of the French. On the other hand, the American and British armies faced terrain more suitable for offensive action in addition to western Germany's two primary industrial regions: the Ruhr and Saar Basin.²²

In February and March, with these considerations in mind, the Allies launched their main assaults into Germany from the British and American sectors. The First Army played mostly a support role in these operations. It defended a long line on the Rhine's west bank so that the other Allied armies could concentrate for their attacks in the north. Bridging materials were taken from the French armored divisions and sent to the Seventh Army to aid its crossing of the Rhine. SHAEF planned for a French corps to follow behind the U.S. Seventh only when German resistance collapsed.²³

In their memoirs both de Gaulle and de Lattre expressed disappointment with this modest mission of the First Army. De Gaulle was particularly outspoken. He asserted that the Allied Command wanted to keep the French on the west bank of the Rhine so that the Americans could "assume for themselves almost all the action in this last phase of the conflict." Nevertheless, the First Army crossed the Rhine on the last day in March. But then General Devers tried, according to de Gaulle, to block the First Army's eastward progress by turning the Seventh Army south into its path. In this instance France's wartime leader showed the Americans resorting to artifice in an attempt to relegate the French to a minor role in the war. This interpretation dovetailed smoothly with the belief that CONAD favored the Seventh Army over the First in its distribution of supplies.²⁴

At the end of March, it was clear the war would soon be over. The American and British armies had crossed the Rhine and nearly encircled the Ruhr. Along the way they had overrun the coal fields of the Saar Basin. On the eastern front the Russians were just thirty miles from Berlin. Observing these developments, President de Gaulle feared that Germany might surrender before the First Army could assume a prominent place in

the final fighting. He telegraphed General de Lattre on March 29: "You must cross the Rhine even if the Americans do not agree and even if you have to cross it in rowboats. It is a matter of the greatest national interest."²⁵

De Lattre received de Gaulle's message on the evening of the 29th. By this time the First Army commander was no longer concerned about obtaining American approval for a French crossing of the Rhine. General Devers had already cleared the operation through SHAEF. Instead, de Lattre worried that he might not have enough boats for a successful river assault on the appointed date, the night of March 30-31. He could have postponed the attack until one day later when 150 boats were scheduled to arrive from the U.S. VI Corps. But he worried that a delay might allow the U.S. Seventh Army, advancing south from its bridgehead at Worms, to cut off the path which he intended to take for a deep thrust into southwestern Germany. Between prudent delay and immediate attack, de Lattre chose the latter. "It was my duty to be rash," he reasoned, "because the nation's stake made it obligatory."²⁶

Using a handful of boats, French soldiers shuttled silently across the Rhine at Speyer in the early hours of March 31. More than a company had crossed by dawn when the Germans were alerted. Before the day ended, the French had carved out a bridgehead three miles in width and two miles in depth. To the south at Germersheim, a second bridgehead was established on the 31st in spite of stiff German opposition. On the following day, France's Chief of Staff of National Defense, General Juin, congratulated de Lattre in the following message:

Bravo! for your crossing of the Rhine. In view of the hurried pace of developments it was necessary that the French Army have its place in the fighting and showed itself also on the highways of

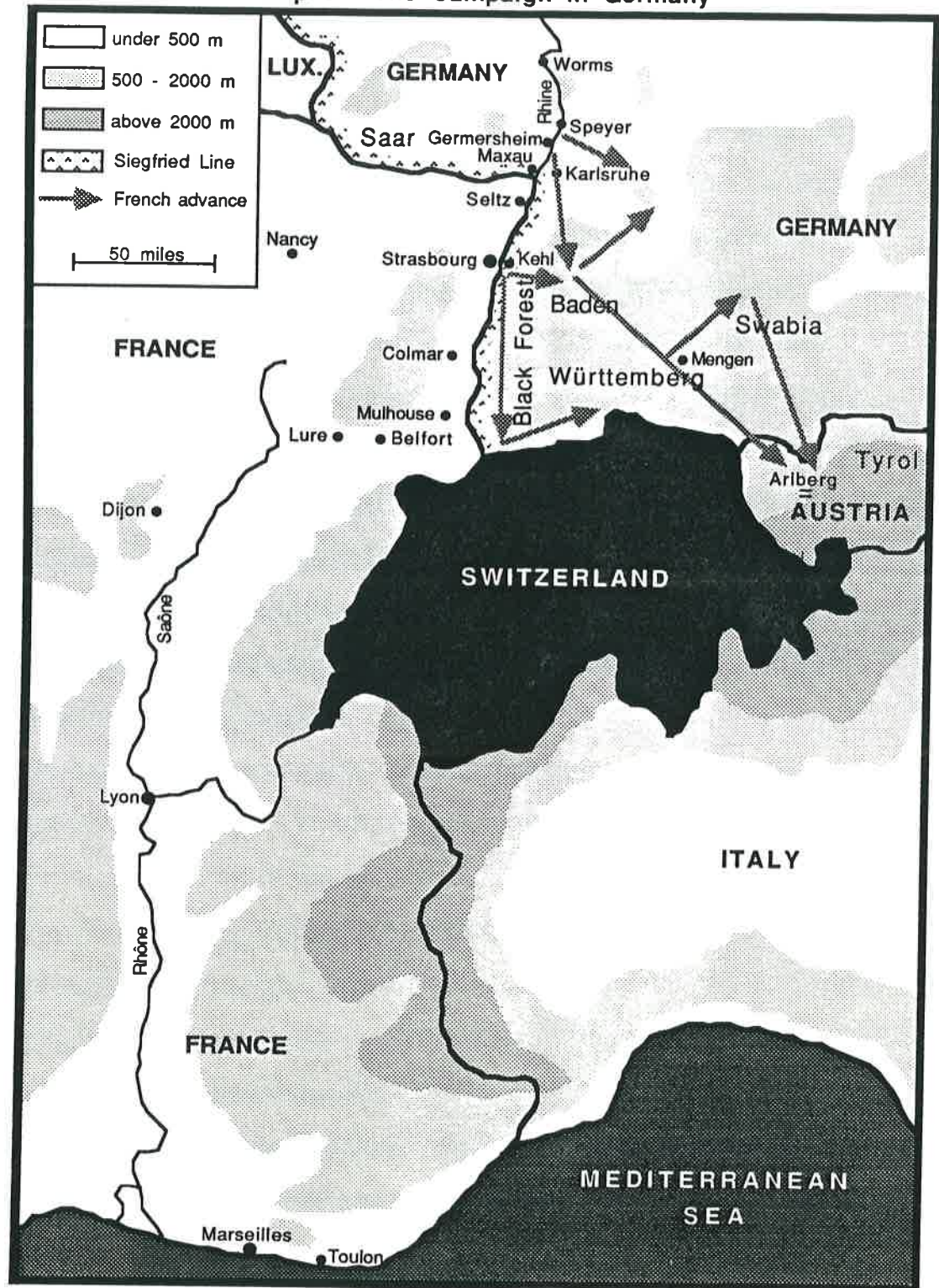
Germany. . . . The prestige of our colors in enemy territory is at stake. Alas! our means are quite poor and I have never felt as much humiliation from this poverty as now with the collapse of Germany. It is a humiliation that America could have spared us by satisfying our demands from the month of August [1944].²⁷

To transport substantial reinforcements and supplies over the Rhine, it was necessary to bridge the mighty river. Within twenty-four hours of the initial crossings at Speyer, First Army engineers began to do just that. The first bridge which they built was appropriately a French one; it was made partly from items hidden by an army officer during the occupation and partly from materials manufactured by French industry in the winter of 1944-45. The inexperience of the engineering troops and an increase in the river's current delayed the opening of this bridge until April 3. In the meantime, barges moved men and munitions to the east bank. The Americans also allowed the French to use their bridge at Mannheim to the north.²⁸

In April, as the First Army cleared the Rhine from Speyer to Switerland, other bridges were thrown across the river. (See Map 5, page 115.) At Seltz and Maximiliansau (or Maxau), engineers constructed bridges over which passed in three weeks more than 73,000 vehicles. A two-way, forty-ton bridge at Kehl opened on April 19. The French, however, did not complete a railroad bridge until May as the war ended; consequently, the First Army relied almost exclusively on trucks to transport supplies east of the Rhine river.²⁹

By April 4 General de Lattre's forces were firmly established on the Rhine's right bank. From Speyer to Karlsruhe, three divisions occupied a bridgehead roughly twenty-five miles in length, fifteen miles in depth. From this position the First Army advanced in a southeasterly direction towards the Austrian Tyrol. As German resistance gradually disintegrated,

Map 5: The Campaign In Germany



progress became rapid; in late April French tanks were rolling almost at will through the Swabian countryside. The objective of the French at this time was to overrun as much German territory as possible to demonstrate their nation's resurrection as well as to hasten the end of the war.³⁰

The First Army's final month of operations (March 31 - May 5, 1945) resembled its first (August 15 - September 15, 1944). In both instances the French initially established a bridgehead on the enemy's side of a water obstacle: the Mediterranean coast of France during DRAGOON and the right bank of the Rhine during the campaign in Germany. Afterwards, tactical advances were rapid against weak enemy resistance. During this exploitation phase, the Army relied mostly on motor transportation to move supplies because damaged rail lines were inoperative. With increased mobility the demand for gasoline rose and threatened to outpace the lift capacity of the Army's limited number of trucks. The French resorted to various expedients in an effort to ward off critical shortages of gasoline and other items.

In April the First Army was unable to use much rail transportation east of the Rhine. Allied bombers and the retreating Germans had caused extensive damage which proved difficult to repair. Bridging the Rhine river by rail was particularly time-consuming; French engineers did not complete a railroad bridge until early May. Trucks not trains would carry supplies forward from depots along the Rhine to distant combat elements pushing towards the German-Austrian frontier.³¹

As the French advanced deep into Germany and farther from their bases of supply, a shortage of trucks emerged. Although the Army Transportation Service had about 200 more trucks (1,000 in all) in April than in January, it was not enough to fully support a campaign of rapid movement. As a

result, the progress of some divisions stalled at times on account of a lack of gasoline. As during DRAGOON, road transportation was less efficient than rail in hauling supplies over long distances.³²

A significant number of deadlined trucks and trailers contributed to the transportation shortage in April. At the end of the month, the Army Transportation Service reported more of its one-ton trailers out of service (846) than in service (795)--a situation which had never come close to existing previously. At the same time, one third of its 1,450 trucks were awaiting repairs.³³

The high percentage of deadlines sprang from several causes. A better job of preventive maintenance would have kept many vehicles on the road and out of the shop. The rugged terrain of the Black Forest and Swabia damaged connecting rods and clutches. Adding to the wear and tear was the ever-growing distance which supply trucks had to travel: from a daily average of 41 miles in mid-March to 116 in late April to 133 in early May.³⁴

Lengthy repair time at ordnance shops also contributed to the transportation shortage. Vehicles often remained deadlined because a spare part could not be obtained. Tires and inner tubes were especially in great demand; week after week, supply reports hammered the same theme: "An immediate allocation of inner tubes is requested. . . . Situation critical . . . given the absolute lack of inner tubes and tires for Dodge trucks." Hot patches to fix flats were likewise in short supply; faulty distribution accounted for part of the problem since the French had dispersed hot patches to individual units as organic equipment instead of holding them centrally at maintenance facilities.

Repair work was also slowed by the numerous moves required by ordnance units following fast-moving combat units. In mid-April, as the advance of the French I Corps began to quicken, its third-echelon maintenance companies repaired about sixty vehicles a day; two weeks later with the First Army's blitzkrieg in full swing, the number tumbled to thirty-four a day. The shortage of spare parts and the work time lost by ordnance units on the move combined to keep vehicles deadlined for long periods of time.³⁵

The French mitigated the severity of the transportation shortage by various means. For example, they reduced their supply needs by living off the conquered land. Food was easily obtained in this way. First Army soldiers requisitioned meals from German civilians or helped themselves to captured enemy stocks. On one occasion, the 1st Armored Division discovered a cache with over a million liters of wine intended for the Wehrmacht. To encourage the use of German resources, the Quartermaster of the I Corps reminded the troops: "Every truckload of food saved in the rear is gas for a tank going to the front, or gas for an ambulance carrying the wounded."³⁶

The First Army obtained other commodities besides food from local resources. The Medical Service used some of the numerous hospitals in Baden and Württemberg. In addition, the I Corps seized more than 300 tons of medical supplies. Salvage crews recovered mounds of enemy guns, ammunition, and other ordnance items and handed them over to the poorly equipped FFI troops of the 14th Infantry Division. Sometimes French units confiscated more than was necessary to satisfy their military requirements. Excessive seizures of German cars provoked General de

Lattre to warn against such "pure and simple pillaging" which "tarnishes the reputation of the First Army."³⁷

While making use of local supplies, the French employed other measures to overcome shortfalls in transportation. As during the 1944 blitz from the Mediterranean coast, provisional truck companies were formed from vehicles in antiaircraft battalions. At the request of Base 901, General Wilson of CONAD loaned the First Army initially one then two companies of tractors with ten-ton trailers. These vehicles boosted the lift capacity of the Army by 1,500 tons.³⁸

In late April the plane began supplementing the truck as a carrier of supplies. Transporting critically needed gasoline, French pilots made four or five flights every day from Strasbourg southeast to Mengen--a distance of one hundred miles. On the return trip to Strasbourg, planes evacuated the wounded. The U.S. Army Air Force was originally scheduled to land 600 tons daily at Mengen; it contributed, however, far less. Despite this lack of sizable American support, the 1st Armored Division received through the air up to 300 tons of gas a day. Without the airlift, French spearheads would not have traveled as far and as fast as they did in the war's closing days.³⁹

The measures taken to counter the transportation shortage did not fully bridge the gap between the Army's requirements and its receipts. On a few occasions, the French were handicapped by a lack of supplies. During the second half of April, gasoline became scarce at the front, and for this reason the progress of some armored columns was slowed. Rations fell briefly to a low three-day level of supply in spite of the policy of living off the land. This drop was due to the Army's feeding of liberated Allied personnel and captured German troops.⁴⁰

Generally, however, the First Army was well supplied during the campaign in Germany. Ammunition remained abundant on account of low consumption as German resistance disintegrated. Tanks, armored cars and other combat vehicles were available in satisfactory numbers. The decline in food stocks was, as mentioned, only temporary; at the end of April, the quartermaster reported a six-day supply of rations on hand. The most serious difficulty therefore was the forward movement of gasoline; but even in this item, like nearly all others, the First Army enjoyed a crushing superiority over the expiring Wehrmacht.⁴¹

The German campaign gave many French a feeling of having at least partially avenged the humiliation of 1940. For the soldiers of the First Army, it was a pleasure to experience the rapid advance through Swabia and the mass surrender of enemy troops. On the war's final day, May 7, Moroccan soldiers ascended the Arlberg in western Austria. There, they planted the tricolor flag of France. General de Lattre later wrote of this final act:

In the valleys, in the plains, in the thousands of villages of the Palatinate, Baden, Wurtemberg [sic], Bavaria, and Austria, this same flag, relieved at last of its last scraps of 1940's crêpe [mourning], cast its shadow upon the eighty thousand square kilometres of Hitler's great Reich which had been conquered by our arms. . . .

The nightmare had ended. France was victorious.⁴²

Conclusion

The logistical history of the French First Army began with the fall of France in 1940. This swift, decisive defeat suggested that the French no longer possessed the courage of a great people. With a view to overturning this unflattering notion about their country, General Giraud and other French military leaders undertook in 1943 the rearming and reorganization of the North African Army. What had been lost on the battlefield, they wished to recover on the battlefield. Consequently, they planned to use their limited manpower to create a large fighting force of eleven divisions.

General Giraud hoped that the U.S. Army would provide the service troops to support these eleven divisions. But in January 1944 the Americans pressured the French to adopt a policy of creating a smaller, eight-division army supported by their own service troops. Such an army was never formed. Even with the best of efforts, it would have been very difficult to organize enough service units for eight divisions given the lack of technical personnel in North Africa. The French High Command, however, made only a modest effort, remaining more interested in combat at the front than logistics in the rear. As a result the First Army relied heavily on the Americans for service support from the communications zone.

The desire to avenge the defeat of 1940 influenced other actions of the French. Eager to participate as much as possible in the fighting, they asked for more and better supplies than the U.S. Army was willing or able

to give. French frustration at receiving less than they requested sometimes strained their alliance with the Americans.

The French were correct in their belief that the First Army was not as well supplied as the U.S. Seventh. There was, for example, a difference in the quality of the tanks in the two armies. The French usually received older U.S. models which had been in production long enough for them to exist in plentiful numbers. America's newest and hence less numerous tanks, such as the M5A1 Stuart in 1943 and the M24 Chaffee in 1945, were earmarked for U.S. forces first.

The quantity of maintenance supplies available to the two national armies was also unequal. From December 31, 1944 to February 28, 1945 the U.S. Seventh Army held on average 500 pounds of supplies per man in its depots. During the same period the French First Army had on hand for each man on the DRAGOON troops list--i.e., soldiers in the North African units whom the U.S. Army agreed to support--about 400 pounds of supplies.¹ These figures dispute CONAD's claim of making no distinction between the American and French troops which it supported.

It is hardly surprising that the Americans looked after their own needs before those of the French. Even General de Gaulle, a frequent critic of U.S. military policy towards France, expressed understanding for this instance of American self-interest. After the war he wrote that "the American services, having to divide supplies between Patch [the commander of the Seventh Army] and de Lattre, were inclined, as was only human [my emphasis], to grant priority to our allies."² Such understanding was not always in evidence among the French during the war in the heat of battle.

Besides natural self-interest, military considerations may well have influenced the Americans to give more support to Patch's forces.

Positioned just south of the Saar in flatter terrain, the Seventh Army was in a better strategic location than the First Army. The Americans were not enthusiastic about de Lattre's decision to share some of his U.S. supplies with the FFI; many American officers doubted the effectiveness of these irregular soldiers in traditional combat. In addition, a comparison between the repair work of French and American service troops would have been in the latter's favor due to superior numbers and skill; thus, equipment sent to the Seventh Army enjoyed more operating time. The above considerations probably led the Americans to believe that supplies were better spent on their own forces. From this belief should have followed the conclusion that it was sound military policy to send more supplies to the Seventh Army.

The history of the logistics of the First Army offers several insights into this branch of military science. For instance, the First Army's logistical organization has received consideration. The relative number of combat troops versus service troops was examined as was the various duties of the services and the echelon system of repair. Colonel Allard's calculations before the attack on the Colmar pocket provided a look at the work of the Army's G-4. Attention was also given to the influence of logistics on strategy and tactics and vice versa. For example, the need of the Allies for seaports like Marseilles figured prominently in their decision to launch DRAGOON and Hitler's strategy to defeat it.

A dominant theme in this study of logistics was the impact of various factors on supply. Weather was one of these factors. Fog or blinding snow increased the expenditure of ammunition because both limited visibility. Bitterly cold temperatures could decimate front-line troops and decrease rail traffic. The nature of combat operations greatly affected logistics. A

slow-moving campaign of attrition increased the demand for ammunition and infantry. On the other hand, a rapid advance produced a jump in fuel consumption as well as a shift from rail to road transportation. These "laws" of logistics are lessons learned from a study of the supply of the French First Army.

Endnotes

Chapter One

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¹⁷Vignerass, Rearming the French, pp. 86-87, 94-97.

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²⁴Vignerass, Rearming the French, pp. 110, 114-15, 123-24; de Lattre, La Première Armée, pp. 5-8; de Gaulle, Unity, pp. 278-79.

²⁵De Lattre, La Première Armée, pp. 5-8; Vignerass, Rearming the French, pp. 71, 114-15, 126-29; Gaujac, De la Provence à l'Alsace, pp. 14, 18; Armée "B", "Dissolution de grandes unités," 10 P 216, S.H.A.T.; Armée "B", État-Major, 4e Bureau, "Il faut reconstruire vite," Folder: Préparation

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²⁸Coakley, Global Logistics and Strategy 1943-1944, pp. 706-07.

²⁹*ibid.*, p. 707; [United States Army, Mediterranean Theater of Operations], Logistical History of NATOUSA - MTOUSA: 11 August 1942 to 30 November 1945, ed. Colonel Creswell G. Blakeney (Naples, Italy: G. Montanino, 1946), pp. 367, 371-72, 388-89; Vignerat, Rearming the French, pp. 100, 130-31, 165, 169, 171, 189-91; United States Army, Continental Advance Section, Communications Zone, European Theater of Operations, CONAD Compendium, Editor-in-Chief, Colonel Charles H. E. Scheer, 2 vols. (Heidelberg, Germany: Aloys Gräf, 1945), vol. 2: p. 820; United States Army, Seventh Army, Report of Operations 1944-45, 3 vols. (Heidelberg, Germany: Aloys Gräf, 1946), vol. 1: p. 67; Base 901, pp. 42-43; Giraud, Un seul but, pp. 186-87; Gaujac, De la Provence à l'Alsace, p. 62; [United States Army, Mediterranean Theater of Operations], "Comments on Ordnance Service Activities in the French Forces as Presented by U.S. Liaison Personnel on Duty with the First French Army," p. 29-30, Folder: MTO Ordnance History, Record Group 332, The National Archives, Washington, D.C.; Advance Headquarters, Communications Zone, North African Theater of Operations, United States Army to Commanding General, Sixth Army Group [Devers], October 26, 1944, "Issue of Trucks to French 515th, 516th, and 517th Groupes de Transport," Folder: Équipement des Groupes de Transport français 1944-1945, Carton 10 P 221, S.H.A.T. The French were not the only ones who had trouble keeping track of supplies. Prior to the U.S.-led invasion of North Africa in November 1942, the

American Services of Supply could not find in their depots in the United Kingdom many items of equipment needed for the amphibious attack. The War Department was forced to reship numerous misplaced supplies. But while a parallel supply problem existed in this and other instances in the American Army, it was rarely as serious as in the French Army. See Millett, Army Service Forces, pp. 80, 112; Lida Mayo, The Ordnance Department: on Beachhead and Battlefront, United States Army in World War II, The Technical Services, vol. 6, pt. 3 (Washington, D.C.: Office of the Chief of Military History, United States Army, 1968), p. 103; Joseph Bykofsky and Harold Larson, The Transportation Corps: Operations Overseas, United States Army in World War II, The Technical Services, vol. 6, pt. 1, no. 3 (Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1957), p. 142.

³⁰Logistical History of NATOUSA - MTOUSA, pp. 275, 281, 288; Vignerat, Rearming the French, pp. 106, 110, 132-38; Bykofsky, Transportation Corps: Operations Overseas, p. 182; Bradley, A Soldier's Story, pp. 39, 433; Brooks E. Kleber and Dale Birdsell, The Chemical Warfare Service: Chemicals in Combat, United States Army in World War II, The Technical Services, vol. 6, pt. 7, no. 3 (Washington, D.C.: Office of the Chief of Military History, United States Army, 1966), p. 125.

³¹Coakley, Global Logistics and Strategy 1943-1944, p. 707; Alphonse Pierre Juin, Mémoires, 2 vols. (Paris: Arthème Fayard, 1959-1960), vol. 2: Libération de la France, avènement de la IV^e République (1944-1947); Maroc (1947-1951); Alliance Atlantique (1951-1958), p. 248. One of the clearest indications of the very minor logistical role played by the French in Italy comes from the U.S. Army's history of supply in the North African or Mediterranean Theater of Operations. Although the writer discusses at length the work of Italian service troops, German POW's and civilians in addition to U.S. service troops, there is not a word on the French. See Logistical History NATOUSA - MTOUSA, pp. 271-89, 374-75.

³²Vignerat, Rearming the French, pp. 146, 165-69, 174-75; de Lattre, La Première Armée, pp. 5-8; Armée "B", "Il faut reconstruire vite," 10 P 216, S.H.A.T.

³³Vignerat, Rearming the French, pp. 38, 241.

³⁴Ibid., pp. 241-53; Eisenhower, Crusade, p. 7; "Comments on Ordnance in the French Forces by U.S. Personnel," p. 37, Record Group 332, National Archives; Jean Navard, La libération avec les chars, du débarquement en Provence jusqu'à Ulm 15 août 1944 - 8 mai 1945, avec la 1ère Armée Française, préface du Général Maurice Durosoy (Paris: Nouvelles Éditions Latines, 1980), p. 56; Leyer to Eisenhower, 28 janvier 1945, "Situation en matériel des unités françaises engagées," Folder: Exécution du Plan de Réarmement du 30 Novembre 1944, notes et instructions, janvier 1945, Carton 10 P 218, S.H.A.T.; Roland G. Ruppenthal, Logistical Support of the Armies, United States Army in World War II, The European Theater of Operations, vol. 3, pt. 3ab, 2 vols. (Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1953-1959), vol. 1: p. 443. Vignerass understated the disadvantages of substitute weapons. For example, he wrote on page 246 that the French received more modern tanks during the 1944-45 European campaign. But they did not receive very many. The article cited here on French ordnance states that one of the reasons the U.S. Army could easily supply tanks to the French First Army was that it was the only major force using the older M4A2 and M4A4 tanks. Another area in which the French had to make do with substitutes was cigarettes. Instead of Chesterfields and Camels, they were furnished Chelseas, Avalons and other off-brands and at only fifty percent of the normal American ration. If the G.I.s' reaction to these second-rate cigarettes is any indication, the French soldier probably grumbled about this treatment. See Base 901, p. 43; Lee Kennett, G.I.: the American Soldier in World War II (New York: Warner Books, Inc., 1989) pp. 94, 97.

³⁵Vignerass, Rearming the French, pp. 246-49; "Comments on Ordnance in the French Forces by U.S. Personnel," p. 37, Record Group 332, National Archives; Leyer to Eisenhower, 28 janvier 1945, "Situation en matériel," 10 P 218, S.H.A.T.

³⁶Vignerass, Rearming the French, pp. 148-49, 155-56, 165.

³⁷Ibid., pp. 124, 168, 229, 234-35, 238; Coakley, Global Logistics and Strategy 1943-1944, p. 707; Base 901, p. 16; Vernet, l'armée de terre, pp. 23-24; Logistical History of NATOUSA - MTOUSA, pp. 278-79; 9ème Division d'Infanterie Coloniale, Direction du Service du Matériel, 26 mai 1945, "Enseignements tirés sur le fonctionnement du Service du Matériel durant la campagne 1944-1945", Carton 11 P 162, S.H.A.T.; "Comments on

Ordnance in the French Forces by U.S. Personnel," pp. 30-31, Record Group 332, National Archives.

³⁸Vigneras, Rearming the French, pp. 168, 178; "Comments on Ordnance in the French Forces by U.S. Personnel," pp. 29-31, Record Group 332, National Archives.

³⁹The information used for compiling Chart 1 is found in Kent Roberts Greenfield, Robert R. Palmer and Bell I. Wiley, The Organization of Ground Combat Troops, United States Army in World War II, The Army Ground Forces, vol. 1, pt. 1 (Washington, D.C.: Historical Division, Department of the Army, 1947), table facing page 161, pp. 274-75, 306.

⁴⁰*Ibid.*; Kleber, Chemicals in Combat, p. 27; Alfred M. Beck, et al., The Corps of Engineers: the War against Germany, United States Army in World War II, The Technical Services, vol. 6, pt. 6, no. 4 (Washington D.C.: Center of Military History, United States Army, 1985), p. 205; George Raynor Thompson and Dixie R. Harris, The Signal Corps: the Outcome (Mid-1943 through 1945), United States Army in World War II, The Technical Services, vol. 6, pt. 5, no. 3 (Washington D.C.: Office of the Chief of Military History, United States Army, 1966), p. 15.

⁴¹Greenfield, Organization of Ground Combat Troops, table facing page 161, p. 306; Logistical History of NATOUSA - MTOUSA, p. 278; Coakley, Global Logistics and Strategy 1943-1944, p. 356; Vigneras, Rearming the French, p. 168; Ruppenthal, Logistical Support of the Armies, vol. 1: pp. 117-18, 127-28; 229; vol. 2, p. 299. It seems that nondivisional engineers in the army and corps were reclassified in late 1944 as offering only combat service support. Previously they had been considered as performing combat as well as logistical functions. See Beck, Corps of Engineers: War against Germany, p. 205. In order that the reader can understand how I arrived at the figures of 4,061 and 8,055 for combat service support and combat support respectively, the following explanation is given. According to the table facing page 161 in The Organization of Ground Combat Troops, line 44, columns 23 and 27, 33.517% of the troops at the corps and army echelons, not including antiaircraft troops, were providing combat service support. Multiplying this percentage by the number of non-AA soldiers in the corps and army (12,116), as shown on page 306, yields the given figure of 4,061. The remainder, 8,055, is, of course, the number of combat support troops not in AA units.

⁴²Military writers do not always make a clear distinction between the service units in the combat zone and those in the communications zone, and often refer to both as providing "service support."

⁴³Vignerat, Rearming the French, pp. 168, 188, 313-14; de Lattre to Juin, 5 novembre 1944, "Ordre de bataille et stationnement de la 1ère Armée française à la date du 1er novembre 1944," p. 15, Folder: Stationnement octobre - décembre 1944, Carton 10 P 87, S.H.A.T.; Paul Gaujac, L'armée de la victoire, vol. 4: Du Rhin au Danube 1944-1945 (Paris: Charles-Lavauzelle, 1986), pp. 54, 104; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 302. See also footnote 42 in this chapter. The official history of Base 901 shows about 12,000 service-related troops in support of the French First Army's North African divisions at the end of the war. See Base 901, pp. 143-45. The figure quoted here of 2,250 comes from Logistical Support of the Armies.

⁴⁴"État-Major 4e Bureau de la 1re Armée Française (des côtes de la Méditerranée aux Alpes autrichiennes)," Revue historique de l'armée, numéro 2 (1946), pp. 77-78; United States Army, "Supply and Maintenance on the European Continent," General Board Report 130, pp. 72-73; Base 901, p. 82.

⁴⁵Kleber, Chemicals in Combat, pp. 279, 418, 429.

⁴⁶William F. Ross and Charles F. Romanus, The Quartermaster Corps: Operations in the War against Germany, United States Army in World War II, The Technical Services, vol. 6, pt. 2 no. 4 (Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1965), pp. 7-9.

⁴⁷Mayo, On Beachhead and Battlefield, p. 63.

⁴⁸Vignerat, Rearming the French, pp. 168-69.

Chapter Two

¹Coakley, Global Logistics and Strategy 1943-1945, pp. 285-89; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 117.

²Martin Blumenson, Liberation (Alexandria, Va.: Time-Life Books, 1978), pp. 101-02; Stephen E. Ambrose, The Supreme Commander: the War Years of General Dwight D. Eisenhower (Garden City, N.Y.: Doubleday, 1970), pp. 334-38, 446-47; Coakley, Global Logistics and Strategy 1943-1945, pp. 17, 376-81, 805. Another firm adherent to the British position, or at least so in his memoirs, was General Juin. His position is a little surprising since most of the French wanted their forces used in the liberation of their homeland. See Juin, Alger, Tunis, Rome, pp. 343-44, 353; U.S. Seventh Army, Report of Operations, vol. 1: pp. 15-16; The War Years, vol. 3: p. 1668.

³Blumenson, Liberation, pp. 103-04; Ambrose, The Supreme Commander, pp. 334-38; Coakley, Global Logistics and Strategy 1943-1945, p. 381; Matloff, Strategic Planning for Coalition Warfare, p. 472; Eisenhower, Crusade, pp. 281-84.

⁴Eisenhower, Crusade, pp. 162, 187; Blumenson, Liberation, pp. 102-03; U.S. Seventh Army, Report of Operations, vol. 1: p. 63.

⁵U.S. Army, "Supply and Maintenance," General Board Report 130, p. 57; Vignerat, Rearming the French, pp. 183, 186-88, 353; Gaujac, De la Provence à l'Alsace, pp. 50-51.

⁶U.S. Army, "Supply and Maintenance," General Board Report 130, p. 50; Ruppenthal, Logistical Support of the Armies, vol. 1: p. 482, vol. 2, pp. 118-19; Colonel Gazounaud, "Le débarquement en Provence (1944)," Conférence faite par le colonel Gazounaud, Chef d'État-Major des T.O.A., aux officiers de l'E.M.A. et des Directions de Services le 19 février 1947, p. 17; U.S. Seventh Army, Report of Operations, vol. 1: p. 318. There is surprisingly little agreement among sources on the date targeted for the capture of Toulon. Colonel Gazounaud said D+15, the General Board reported D+25 and Ruppenthal wrote D+20. On the other hand, all agreed that Marseilles was expected to fall on around D+40. In recounting his dispute with Prime Minister Churchill over DRAGOON in late July - early August, Eisenhower curiously seemed to discredit the anticipation of a slow moving operation. He wrote that intelligence expected good progress since German formations in the south were of poor quality. Churchill, in arguing against the invasion, "pictured a bloody prospect for the forces attacking from the south. He felt sure they would be involved for many weeks in attempts to reduce the coastal defenses and feared they could not

advance as far northward as Lyon in less than three months." Perhaps the time schedule for DRAGOON was advanced just before the invasion as the pace of events quickened in Normandy. See Eisenhower, Crusade, pp. 281-84.

⁷Mayo, On Beachhead and Battlefront, pp. 285, 287; Bykofsky, Transportation Corps: Operations Overseas, p. 291; U.S. Seventh Army, Report of Operations, vol. 1: pp. 51, 63; U.S. Army, "Supply and Maintenance," General Board Report 130, p. 48; Vigneras, Rearming the French, pp. 186-88.

⁸U.S. Seventh Army, Report of Operations, vol. 1: p. 51, 63; United States Army, Continental Advance Section, Communications Zone, European Theater of Operations, CONAD History, Editor-in-Chief, Colonel Charles H. E. Sheer (Heidelberg, Germany: Aloys Gräf, 1945), p. 9; CONAD Compendium, vol. 1: p. 25, vol. 2: p. 819. In the early part of OVERLORD, the U.S. First Army was also to have complete control over all logistical as well as tactical operations. See Ruppenthal, Logistical Support of the Armies, vol. 1: p. 208.

⁹U.S. Seventh Army, Report of Operations, vol. 1: p. 65; Gazounaud, "Le débarquement," Conférence faite le 19 février 1947, p. 12; Base 901, p. 119.

¹⁰Gazounaud, "Le débarquement," Conférence faite le 19 février 1947, pp. 10-12; Ruppenthal, Logistical Support of the Armies, vol. 1: pp. 312, 322; Erna Risch, The Quartermaster Corps: Organization, Supply, and Services, United States Army in World War II, The Technical Services, vol. 6, pt. 2, no. 1a (Washington D.C.: Office of the Chief of Military History, Department of the Army, 1953), p. 144; Gaujac, De la Provence à l'Alsace, pp. 90-91. For examples of the confusion of supply operations on the beaches during TORCH in November 1942 and later during other amphibious assaults, see Ross, Quartermaster Corps: War against Germany, pp. 51-52, 75; Mayo, On Beachhead and Battlefront, p. 179; Beck, Corps of Engineers: War against Germany, p. 80. Not all of the preinvasion preparations were performed, see Lieutenant-Colonel Cartier, Directeur du Service des Essences de la 1ère Armée Française, le 19 juin 1945, "Rapport sur l'activité et le fonctionnement du Service des Essences de la 1ère Armée Française pendant les campagnes de France et d'Allemagne (15 août 1944 - 8 mai 1945)," p. 3, Folder: Service des Essences, Carton 10 P 234, S.H.A.T.

¹¹Ross, Quartermaster Corps: War against Germany, pp. 433-34, 485; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 430-31; CONAD History, pp. 205, 213; Bradley, A Soldier's Story, pp. 544-45.

¹²1er Corps d'Armée, État-Major, 4e Bureau, le 28 mai 1945, "Opérations du 16 avril au 8 mai 1945: Enseignements à tirer de la campagne Rhin-Danube sur le fonctionnement du 4e Bureau et des services dans l'exploitation du succès," p. 5, Folder: Notes sur l'organisation des services 1944-1945, Carton 10 P 216, S.H.A.T.; Earl F. Ziemke, Stalingrad to Berlin: the German Defeat in the East, Army Historical Series (Washington D.C.: Office of the Chief of Military History, United States Army, 1968), pp. 229, 232; 1ère Armée Française, État-Major, 4e Bureau, le 12 février 1945, "Rapport hebdomadaire du 4-10 février 1945," p. 5, Carton 10 P 217, S.H.A.T.; Pierre Lyautey, La campagne de France: Provence - Alpes - Jura - Vosges - Alsace 1944-1945 (Paris: Plon, 1946), p. 43; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 173, 257, 430-31; United States Army, "Operation, Organization, Supply, and Services of the Transportation Corps in the European Theater of Operations," General Board Report 122, Appendices 38-39; Eisenhower, Crusade, p. 290.

¹³U.S. Army, "Supply and Maintenance," General Board Report 130, pp. 50, 52; Gazounaud, "Le débarquement," Conférence faite le 19 février 1947, p. 12; CONAD History, p. 5; Colonel Allard, "Le ravitaillement en munitions, campagne 1943-1945," Conférence faite par le colonel Allard Chef du 4e Bureau de l'E.M.A. à Berne, devant les officiers suisses de l'E.M. General et de la Société des Officiers du Service des Munitions le 27 avril 1947, p. 9; Coakley, Global Logistics and Strategy 1943-1945, pp. 135-36. According to Allard and a French ordnance manual, a unit of fire could be translated approximately into the more understandable days of supply. Ruppenthal, on the other hand, wrote that such a conversion was not possible. See Ruppenthal, Logistical Support of the Armies, vol. 1: pp. 306-07; 1ère Armée Française, Direction du Service du Matériel, "Instruction sur le fonctionnement du ravitaillement en munitions aux armées," p. 4, Folder: Service du Matériel, Carton 10 P 234, S.H.A.T.

¹⁴Gazounaud, "Le débarquement," Conférence faite le 19 février 1947, p. 17; U.S. Seventh Army, Report of Operations, vol. 1: pp. 63, 98-99, 315; Base 901, p. 82.

¹⁵CONAD History, p. 29. The sources used for drawing Map 1 were

Ruppenthal, Logistical Support of the Armies, vol. 1: p. 476; Base 901, pp. 25-26; CONAD History, p. 29.

¹⁶Lemonnier, Cap sur la Provence, pp. 144-45.

¹⁷CONAD Compendium, vol. 2: pp. 821-22; Charles M. Wiltse, The Medical Department: Medical Service in the Mediterranean and Minor Theaters, United States Army in World War II, The Technical Services, vol. 6, pt. 4, no. 2 (Washington, D.C.: Office of the Chief of Military History, United States Army, 1965), p. 373; U.S. Seventh Army, Report of Operations, vol. 1: pp. 81-83.

¹⁸Gazounaud, "Le débarquement," Conférence faite le 19 février 1947, pp. 12-13; Beck, Corps of Engineers: War against Germany, pp. 75, 437; U.S. Seventh Army, Report of Operations, vol. 1: pp. 126-27, 143; Lyautey, La campagne de France, p. 6; Devers, interview by Burg, July 2, 1975, pp. 199-200; Navard, La libération avec les chars, pp. 49-50.

¹⁹Bykofsky, Transportation Corps: Operations Overseas, p. 293; CONAD History, pp. 31-34.

²⁰Ruppenthal, Logistical Support of the Armies, vol. 1: p. 327; Coakley, Global Logistics and Strategy 1943-1945, pp. 796, 819. Similar to my chain analogy is one given by Lion Gardener. He noted three hundred years ago in his Relation of the Pequot Warres that "war is like a three-footed stool, want one foot and down comes all; and these three feet are men, victuals, and munitions;" see Risch, Quartermaster Corps: Organization, p. xi. Albert Speer, Germany's Minister of War (1942-45), pointed out that the Allied air attacks were poorly executed throughout most of the war; they failed to concentrate on a single important industry like ball bearings, motors for planes, coal mines or chemical plants. Instead, the bombing effort was dispersed. In the final twelve months of the war, however, the Allies severely crippled the German petroleum industry. This blow nullified the increased aircraft production of 1944 since planes were grounded for lack of aviation gasoline. The Army also felt the pinch. It took over a month, according to Speer, for the Wehrmacht to save the small reserve used to fuel the Ardennes offensive. "A plentiful and reliable supply of petroleum products," wrote one expert on U.S. Quartermaster supply, "was probably the single most vital factor in establishing Allied logistical superiority over the German Army." See

Albert Speer, Inside the Third Reich, trans. Richard and Clara Winston, with an introduction by Eugene Davidson (New York: Avon Books, 1971), pp. 363-74, 432, 445-52, 517-18; Ross, Quartermaster Corps: War against Germany, p. 155; Eisenhower, Crusade, p. 368.

²¹CONAD History, pp. 31-34; U.S. Seventh Army, Report of Operations, vol. 1: p. 315.

²²CONAD Compendium, vol. 2: p. 823; CONAD History, p. 34; U.S. Army, "Supply and Maintenance," General Board Report 130, p. 50; Bykofsky, Transportation Corps: Operations Overseas, p. 294; Gazounaud, "Le débarquement," Conférence faite le 19 février 1947, p. 17.

²³Wiltse, Medical Service in the Mediterranean, p. 553; CONAD History, pp. 30-31.

²⁴Mayo, On Beachhead and Battlefront, p. 287; U.S. Army, "Supply and Maintenance," General Board Report 130, pp. 34, 51-52; Bykofsky, Transportation Corps: Operations Overseas, p. 293; Ross, Quartermaster Corps: War against Germany, pp. 51-52, 75, 79-80; Beck, Corps of Engineers: War against Germany, p. 132.

²⁵Eisenhower, Crusade, pp. 234-35; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 118; Blumenson, Liberation, pp. 111-13.

²⁶Médecin Général Inspecteur Hugonot, gén. éd., Le Service de Santé dans les combats de la libération, préfaces des généraux Juin, de Lattre et Koenig, illustrations de R. Jouanneau-Irriera (Paris: Imprimerie Nationale, s.d.), pp. 56, 59-64.

²⁷Martin Blumenson, Breakout and Pursuit, United States Army in World War II, The European Theater of Operations, vol. 3, pt. 5 (Washington D.C.: Office of the Chief of Military History, Department of the Army, 1961), pp. 535, 567; CONAD History, p. 29; see the map "La jonction DRAGOON, OVERLORD 12 septembre 1944 - la poursuite par les Vallées du Rhône, Saône 28 août - 15 septembre," located at the back of de Lattre, La Première Armée; Eisenhower, Crusade, p. 282.

²⁸Jacques Duprey, L'Ambulance Hadfield-Spears ou la drôle d'équipe, préface du Général de Larminat (Paris: Nouvelle Éditions Latines, 1953),

pp. 151-52; de Lattre, La Première Armée; pp. 139-40; CONAD History, pp. 33-34, 42; Lemonnier, Cap sur la Provence, p. 124; Speer, Inside the Third Reich, p. 517.

²⁹Base 901, pp. 37-38; Jacques Robichon, The Second D-Day, trans. Barbara Shuey (New York: Walker and Company, 1969), p. 279; CONAD History, p. 54; 1ère Division Blindée, "Enseignements de la campagne de France en ce qui concerne le Génie," Carton 11 P 206, S.H.A.T.; U.S. Seventh Army, Report of Operations, vol. 1: pp. 169, 326-27; Thompson, The Signal Corps: the Outcome, p. 136; Lieutenant-colonel Boucley, "Les Transmissions de la 1re Division Blindée," La revue des Transmissions, numéro 23 (juin 1948), p. 13; Bykofsky, Transportation Corps: Operations Overseas, p. 297; Blumenson, Breakout and Pursuit, p. 535.

³⁰Gazounaud, "Le débarquement," Conférence faite le 19 février 1947, p. 17; CONAD History, p. 54; Gaujac, De la Provence à l'Alsace, pp. 140-41; Ruppenthal, Logistical Support of the Armies, vol. 1: p. 520; U.S. Seventh Army, Report of Operations, vol. 1: pp. 318, 320-21; CONAD Compendium, vol. 2: p. 826. While most of the damage done in southeastern France was attributable to the Germans, some resulted from Allied air attacks and Resistance activities just prior to DRAGOON, see Robichon, The Second D-Day, pp. 36-37; U.S. Seventh Army, Report of Operations, vol. 1: p. 103; de Gaulle, Unity, p. 316.

³¹U.S. Seventh Army, Report of Operations, vol. 1: pp. 318-20; CONAD History, p. 61; Bykofsky, Transportation Corps: Operations Overseas, p. 292; Général Bondil, "Le chemin de fer et les transports interalliés 1944-1945," Revue historique de l'armée, numéro 2 (1959), pp. 90-91; Beck, Corps of Engineers: War against Germany, pp. 451-54; Base 901, pp. 25-28, 31-32, 37-38; Colonel P. L. F. Philibert, "Base franco-américaine 1944-1945," Revue historique de l'armée, numéro spécial consacré à la fraternité d'armes franco-américaine (1957), pp. 111-12; "4e Bureau de la 1re Armée," pp. 81-82.

³²CONAD Compendium, vol. 2: p. 823; "4e Bureau de la 1re Armée," pp. 81-82; Base 901, pp. 29, 31-32; CONAD History, p. 61; U.S. Seventh Army, Report of Operations, vol. 1: pp. 319-20; de Lattre, La Première Armée, pp. 176-77.

³³De Lattre, La Première Armée, pp. 139-40; Base 901, pp. 125-26; "Comments on Ordnance in the French Forces by U.S. Personnel," Record Group 332, National Archives, p. 33; Ruppenthal, Logistical Support of the Armies, vol. 1: pp. 546, 553.

³⁴De Lattre, La Première Armée, pp. 176-77; Base 901, p. 129; Duprey, L'Ambulance Hadfield-Spears, pp. 146-48; Navard, La libération avec les chars, pp. 87, 93, 161-63; Ruppenthal, Logistical Support of the Armies, vol. 1: p. 571, vol. 2: pp. 144-46; "Comments on Ordnance in the French Forces by U.S. Personnel," Record Group 332, National Archives, p. 49; Colonel Allard, "Le 4e Bureau de la 1ère Armée Française dans la Bataille de Colmar," Conférence faite par le colonel Allard Chef du 4e Bureau de l'État-Major de l'Armée aux officiers de l'E-M-A de Directions des Services le 26 février 1946, pp. 15-16; Général Le Troadec, "Le Service du Matériel en Afrique du Nord et dans la campagne de France," Revue historique de l'armée, numéro 3 (1956), p. 108.

³⁵Base 901, pp. 27-29, 31-32; Bykofsky, Transportation Corps: Operation Overseas, pp. 296-98; Bondil, "Le chemin de fer," pp. 90-91.

³⁶Cartier, "Service des Essences de la 1ère Armée," p. 4, 10 P 234, S.H.A.T.; "4e Bureau de la 1re Armée," pp. 81-82; de Lattre, La Première Armée, pp. 128, 147; CONAD Compendium, vol. 2: p. 823; Base 901, pp. 119-20, 125-26, 129; U.S. Army, "Supply and Maintenance," General Board Report 130, pp. 52-53; CONAD History, p. 61; Ruppenthal, Logistical Support of the Armies, vol. 1: pp. 568-71.

³⁷Docteur Henry Déloupy, C'est nous les Africains! souvenirs d'un médecin de la 1re Division Blindée (Paris: Éditions du Scorpion, Promotion et Édition, 1967), pp. 75, 89, 98; Gaujac, De la Provence à l'Alsace, p. 146; de Lattre, La Première Armée, p. 147. The journal of the 1st D.B. shows that division suffering from the gasoline crisis nearly every day from August 22 [a week before Armée B's rapid advance actually began] to September 14 and beyond. See Ministère de la Défense, État-Major de l'Armée de Terre, Service Historique, Campagnes de France et d'Allemagne (1944-1945), Guerre 1939-1945, les grandes unités françaises, historiques succincts, tome V, 2ème partie, sous la direction du colonel Roger Michalon, chef de la section "Études" (Paris: Imprimerie Nationale, 1975), pp. 801-45.

³⁸De Lattre, La Première Armée, p. 128; de Gaulle, Salvation, pp. 26, 29; Navard, La libération avec les chars, p. 117.

³⁹Blumenson, Breakout and Pursuit, pp. 567, 654-55, 661, 670, 697-99; Campagnes de France et d'Allemagne, tome V, 2ème partie: pp. 821, 835, 845; Wiltse, Medical Service in the Mediterranean, p. 376; U.S. Seventh Army, Report of Operations, vol. 1: pp. 275, 279-80, 305; Navard, La libération avec les chars, p. 86.

Chapter Three

¹Beck, Corps of Engineers: War against Germany, pp. 445-46; CONAD History, pp. 47, 61; Logistical History of NATOUSA - MTOUSA, p. 35; U.S. Army, "Supply and Maintenance," General Board Report 130, pp. 51-52.

²Base 901, pp. 33, 36; Philibert, "Base franco-américaine," p. 113; CONAD Compendium, vol. 2: p. 824; CONAD History, p. 72; 1ère Armée Française, Base 901, Delbase-Marseille, le 20 février, 1945, "Rapport du Colonel Mamier, Commandant la Delbase 901, sur l'activité de la Delbase au cours du 4ème trimestre de l'année 1944," p. 1, Carton 11 P 268, S.H.A.T.; 1ère Armée Française, État-Major, 4e Bureau, le 24 octobre 1944, "Organisation de la zone de communications avancée," p. 2, Folder: Notes relatives aux ravitaillements, août 1944 à juillet 1945, Carton 10 P 219, S.H.A.T.

³CONAD History, pp. 72, 82; CONAD Compendium, vol. 2: pp. 830-32; Ruppenthal, Logistical Support of the Armies, vol. 1: pp. 7, 211-13; Mayo, On Beachhead and Battlefield, p. 218; Wiltse, Medical Service in the Mediterranean, p. 400; [United States Army, Delta Base Section, Communications Zone, European Theater of Operations], History of Delta Base Section (n.p., ca. 1945), pp. 14, 16; Gaujac, De la Provence à l'Alsace, p. 66.

⁴Devers, interview by Burg, February 4, 1975, p. 159; CONAD History, pp. 70, 105, 111-12, 166; Delta Base Section, pp. 14, 33; Base 901, p. 43; Ruppenthal, Logistical Support of the Armies, vol. 1: p. 4, vol. 2: pp. 40-45, 383; Beck, Corps of Engineers: War against Germany, pp. 75, 437; Logistical History of NATOUSA - MTOUSA, p. 38; Eisenhower, Memo, February 1, 1945, The War Years, vol. 4: pp. 2466-69.

⁵Philibert, "Base franco-américaine," pp. 110, 114; Base 901, pp. 17-18, 33, 101-03.

⁶Ross, Quartermaster Corps: War against Germany, pp. 204-05; de Lattre, La Première Armée, p. 168; Philibert, "Base franco-américaine," pp. 114-15; CONAD Compendium, vol. 2: pp. 819-20; CONAD History, pp. 82-84; Base 901, pp. 17-18, 48.

⁷Base 901, pp. 47-48, 54-55; Gaujac, Du Rhin au Danube, p. 54; Wilson to de Lattre, 4 December 1944, "Change of Status of General Granier," Folder: Base Militaire 901, conflits d'attributions décembre 1944 - mars 1945, Carton 11 P 260, S.H.A.T.; Base 901, Delbase-Marseille, le 20 février 1945, "Rapport sur Delbase au cours du 4ème trimestre de 1944," pp. 7-10, 11 P 268, S.H.A.T.; 1ère Armée Française, Base de Marseille, le 20 avril 1945, "Rapport du Commandant de la Delbase sur l'activité de la Base de Marseille au cours du 1er trimestre de l'année 1945," pp. 8, 21-24, Carton 11 P 268, S.H.A.T.; 1ère Armée Française, Base de Marseille, le 27 juillet 1945, "Rapport du Commandant de la Delbase sur l'activité de la Base de Marseille au cours du 2ème Trimestre de l'Année 1945," pp. 10, 40-41, Carton 11 P 268, S.H.A.T.

⁸Vigneras, Rearming the French, p. 187; Base 901, pp. 17-18; Base de Marseille, le 27 juillet 1945, "Rapport de la Base de Marseille au cours du 2ème trimestre de l'année 1945," p. 22, 11 P 268, S.H.A.T.

⁹Speer, Inside the Third Reich, pp. 452-53; Lemonnier, Cap sur la Provence, pp. 161-62.

¹⁰Marshal de Lattre de Tassigny, The History of the French First Army, trans. Malcolm Barnes, with a preface by General Eisenhower and an appreciation by Capt. B. H. Liddell Hart (London: George Allen and Unwin Ltd., 1952), pp. 76, 95, 115; Blumenson, Liberation, pp. 111-13; de Lattre à de Gaulle, le 28 août 1944, Reconquérir, pp. 47-48.

¹¹De Lattre, La Première Armée, p. 115; CONAD History, pp. 40-42; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 121; Beck, Corps of Engineers: War against Germany, pp. 445-47; U.S. Seventh Army, Report of Operations, vol. 1: pp. 327, 329-31; Lemonnier, Cap sur la Provence, pp. 230-31. A small example is offered here of the statistical discrepancies sometimes encountered in the study of military history; these numerical

differences defy the historian's attempt to relate the truth of an event in purely mathematical terms. How many cranes did the Germans actually wreck at Marseilles? According to Admiral Lemonnier and General de Lattre, the correct figure is 257. But the U.S. Army's General Board put the number at 125. The fact that de Lattre and Lemonnier gave the same figure can hardly be considered as corroborative evidence: one may have copied the other, perhaps both obtained their information from another single source. Possibly there is only the appearance of a discrepancy of 132 cranes. Since American engineers rehabilitated thirty-five percent of Marseilles' port facilities, according to one authority (Beck, Corps of Engineers: War against Germany, p. 449), then maybe the General Board, or the work from which it took its information, counted just those cranes which were repaired. The precise wording of General Board Report 130 lends an ounce of credence to this possibility; it reads: "Not one of its [Marseilles'] quay side discharge areas was serviceable at the time of its capture and 125 cranes had been wrecked." Although there exists a danger of reading too much between the lines, it is noted that the Board did not state, as in the case of quay side discharge areas, that the 125 cranes represented all that were present at the port. In addition to this slight evidence supporting de Lattre's and Lemonnier's testimony, the wrecking of all cranes would have been commensurate with the other reported destruction wrought by the Germans at Marseilles. This writer therefore decided to use 257 as the total number of cranes disabled. The historian must try to reconcile conflicting accounts or to determine which have greater credibility, sometimes an impossible task. Obviously, he must never be a source of discrepancies himself. By way of illustration, William F. Ross' and Charles F. Romanus' excellent study of the Quartermaster Corps in the European theater states on pages 531-32 that the Allies had planned on capturing 60,000 Germans by D+90 of OVERLORD. But on pages 631-32 the writers' figure changed to 120,000. See U.S. Army, "Supply and Maintenance," General Board Report 130, p. 67; Ross, Quartermaster Corps: War against Germany, pp. 531-32, 631-32.

¹²Ruppenthal, Logistical Support of the Armies, vol. 1: pp. 480, 535, vol. 2: pp. 52, 121; Eisenhower, Crusade, pp. 279-80; U.S. Seventh Army, Report of Operations, vol. 1: pp. 329-31; Logistical History of NATOUSA - MTOUSA, p. 102; U.S. Army, "Supply and Maintenance," General Board Report 130, pp. 54, 67.

¹³CONAD History, pp. 40-41; Beck, Corps of Engineers: War against Germany, pp. 446-47; U.S. Seventh Army, Report of Operations, vol. 1: pp. 329-31; Logistical History of NATOUSA - MTOUSA, p. 102.

¹⁴De Lattre, La Première Armée, pp. 115-16; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 122-24; Philibert, "Base franco-américaine," p. 111; U.S. Seventh Army, Report of Operations, vol. 1: pp. 329-31.

¹⁵CONAD History, pp. 41-42, 234, 236; Beck, Corps of Engineers: War against Germany, pp. 444-46; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 122; Logistical History of NATOUSA - MTOUSA, p. 102; U.S. Seventh Army, Report of Operations, vol. 3: p. 897; U.S. Army, "Supply and Maintenance," General Board Report 130, pp. 34, 49.

¹⁶U.S. Army, "Supply and Maintenance," General Board Report 130, pp. 66-68; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 122, 124, 430-31; Bykofsky, Transportation Corps: Operations Overseas, p. 312.

¹⁷Ruppenthal, Logistical Support of the Armies, vol. 2: p. 122; Bykofsky, Transportation Corps: Operations Overseas, pp. 319-20; CONAD History, p. 108; CONAD Compendium, vol. 2: p. 823.

¹⁸Base 901, Delbase-Marseille, le 20 février 1945, "Rapport sur Delbase au cours du 4ème trimestre de 1944," pp. 6-9, 11 P 268, S.H.A.T.; Vignerat, Rearming the French, pp. 189-90; Granier à de Lattre, 25 décembre 1944 (date d'arrivée à la 1re Armée Française), Folder: Tableaux d'effectifs et approvisionnements, mars 1944 - octobre 1945, Carton 11 P 260, S.H.A.T.; Mamier à de Lattre, 16 avril 1945, "Véhicules à Marseille," Folder: Tableaux d'effectifs et approvisionnements, mars 1944 - octobre 1945, Carton 11 P 260, S.H.A.T.; Advance Hq, COMZONE NATOUSA to Devers, October 26, 1944, "Issue of Trucks," 10 P 221, S.H.A.T.

¹⁹Bykofsky, Transportation Corps: Operations Overseas, p. 319; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 128; Chester Wardlow, The Transportation Corps: Responsibilities, Organization, and Operations, United States Army in World War II, The Technical Services, vol. 6, pt. 1, no. 1 (Washington D.C.: Office of the Chief of Military History, Department of the Army, 1951), p. 291; Base 901, Delbase-Marseille, le 20 février 1945, "Rapport sur Delbase au cours de 4ème trimestre de 1944,"

pp. 6, 8, 11 P 268, S.H.A.T.; U.S. Army, "Supply and Maintenance," General Board Report 130, p. 34.

²⁰Carl Raymond Gray, Railroading in Eighteen Countries: the Story of American Railroad Men Serving in the Military Railway Service, 1862-1953 (New York: Charles Scribner's Sons, 1955), pp. 201-05; Bykofsky, Transportation Corps: Operations Overseas, p. 298; U.S. Army, "Transportation Corps in the ETO," General Board Report 122, Appendix 30. The sources used in drawing Map 2 were Bondil, "Le chemin de fer," p. 95; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 39; CONAD History, pp. 236, 239.

²¹Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 122, 158-59, 186-87, 212, 428; U.S. Army, "Supply and Maintenance," General Board Report 130, pp. 68, 98; U.S. Seventh Army, Report of Operations, vol. 1: pp. 319-20, vol. 2: p. 546; Gray, Railroading in Eighteen Countries, pp. 211-12, 218, 225; Ross, Quartermaster Corps: War against Germany, p. 169; CONAD History, p. 128; U.S. Army, "Transportation Corps in the ETO," General Board Report 122, Appendix 30.

²²De Lattre à Devers, le 30 septembre 1944, Reconquérir, p. 88; de Lattre, La Première Armée, p. 223; U.S. Seventh Army, Report of Operations, vol. 2: p. 360; Base 901, p. 30; Ruppenthal, Logistical Support of the Armies, vol. 1, p. 499; Thompson, The Signal Corps: the Outcome, p. 147.

²³Base 901, pp. 34-35.

²⁴Devers, interview by Burg, July 2, 1975, pp. 173, 175-76; de Lattre, La Première Armée, p. 223.

²⁵Beck, Corps of Engineers: War against Germany, pp. 241, 457-58; CONAD History, pp. 105, 234-38; Ruppenthal, Logistical Support of the Armies, vol. 1: pp. 511-13; U.S. Army, "Supply and Maintenance," General Board Report 130, p. 84; Ingénieur en chef R. Labbé, "Service des Essences pendant les campagnes 1942-1945," Revue historique de l'armée, numéro 1 (1956), pp. 139-40; Cartier, le 19 juin 1945, "Rapport sur Service des Essences," p. 10, 10 P 234, S.H.A.T.

²⁶Ruppenthal, Logistical Support of the Armies, vol. 1: pp. 511-13; Cartier, le 19 juin 1945, "Rapport sur Service des Essences," pp. 9-10, 10 P 234, S.H.A.T.; CONAD History, pp. 236-37; Beck, Corps of Engineers: War against Germany, pp. 241, 284; Logistical History of NATOUSA - MTOUSA, pp. 175-76, 198; U.S. Army, "Supply and Maintenance," General Board Report 130, p. 84; Delta Base Section, pp. 40, 86, 88-89.

²⁷Logistical History of NATOUSA - MTOUSA, pp. 172-73, 198; Cartier, le 19 juin 1945, "Rapport sur Service des Essences," p. 10, 10 P 234, S.H.A.T. The quote comes from Logistical History of NATOUSA - MTOUSA, a work notable for its frequent misspellings.

²⁸Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 186-87, 297-303; U.S. Seventh Army, Report of Operations, vol. 3: pp. 917-20.

²⁹Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 301-02, 483-84; CONAD History, pp. 6-7, 34, 53; Ross, Quartermaster Corps: War against Germany, pp. 429; Logistical History of NATOUSA - MTOUSA, pp. 284-85, 288; Delta Base Section, p. 41; Philibert, "Base franco-américaine," pp. 112, 118. One instance of French mistrust of the Italians was recorded in the diary of Dr. Déloupy, a medical officer assigned to the 1st Armored Division. He made the following entries as the division was preparing to leave North Africa for the DRAGOON invasion: "July 27 [1944]. Last night, near the concentration areas, a female ambulance driver blew up a land mine. Is it not a trick of the Italian prisoners who guard the depots? . . . July 31. I did not want to miss the sight of the 1st squadron embarking on the Liberty ships. I went down to the port. To my astonishment, and that of many, it was not the Americans, but the Italian prisoners who were doing the loading. Who will prevent them from sabotaging the boats? And these clumsy oafs [maladroits] had already dropped on the quay a truck, which it was necessary to replace, as well as a light tank. One tank destroyer almost fell through the hold of a Liberty. Our men are furious. In order to prevent any trouble, armed U.S. soldiers took up a position in the port between them and the Italians (Déloupy, C'est nous les Africains!, pp. 22-23)."

³⁰Logistical History of NATOUSA - MTOUSA, p. 288; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 301, 484-87; CONAD History, pp. 133, 178; Delta Base Section, pp. 38, 41-42; Philibert, "Base

franco-américaine," p. 119; CONAD Compendium, vol. 2: p. 830; Thompson, The Signal Corps: the Outcome, p. 398.

³¹CONAD History, pp. 134, 150, 177; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 470-71; Delta Base Section, pp. 41, 87, 101; Bykofsky, Transportation Corps: Operations Overseas, p. 319; Base de Marseille, le 27 juillet 1945, "Rapport de la Base de Marseille au cours du 2ème trimestre de l'année 1945," p. 22, 11 P 268, S.H.A.T.; Vigneras, Rearming the French, pp. 402-03.

³²CONAD History, pp. 104, 128-29, 146, 220; Delta Base Section, p. 101; U.S. Army, "Supply and Maintenance," General Board Report 130, p. 42; Logistical History of NATOUSA - MTOUSA, pp. 480-81; Gray, Railroading in Eighteen Countries, pp. 213, 223-24; Base de Marseille, le 27 juillet 1945, "Rapport de la Base de Marseille au cours du 2ème trimestre de l'année 1945," pp. 23-24, 11 P 268, S.H.A.T.

³³CONAD History, p. 177; Delta Base Section, pp. 41, 88; Ruppenthal, Logistical Support of the Armies, vol. 2: 244, 246, 301, 500-01; Ross, Quartermaster Corps: War against Germany, pp. 169, 208, 384-85; The War Years, vol. 4: pp. 2226-27; Lieutenant-colonel J. Joubert, La libération de la France (Paris: Payot, 1951), pp. 171-72; de Gaulle, Unity, p. 191. The six divisions, which the French were trying to form from mostly FFI personnel, were part of an eight-division plan of rearmament, known as the Metropolitan Program. The Americans were to equip the other two units. The Metropolitan Program made little progress, partly because the Americans were not enthusiastic about it. Except during the period of the Ardennes offensive, they doubted that many of the divisions could be readied in time to participate in the final campaign against Germany. The French, meanwhile, were simply unable to manufacture the required clothing and weapons for six divisions. As earlier in North Africa, the Metropolitan Program also became mired in another round of debate over the issue of service support for combat divisions. When the French submitted the rearmament plan in November 1944, it included a total of 213 support units. But in January, SHAEF increased the number to 1,128, touching off "la bataille des services" again. See Vigneras, Rearming the French, pp. 328-38, 344-60; Winston S. Churchill, The Second World War, vol. 6: Triumph and Tragedy (Boston: Houghton Mifflin Company, 1953), pp. 251-52.

³⁴Vignerat, Rearming the French, pp. 324-25; Gaujac, Du Rhin au Danube, p. 54; de Gaulle, Salvation, pp. 152, 184; Ross, Quartermaster Corps: War against Germany, pp. 122, 210, 631; Base 901, pp. 41-43, 54-55; Logistical History of NATOUSA - MTOUSA, p. 375; Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, p. 12; de Lattre, La Première Armée, 194-97. A report from the First Army's G-1 (personnel and administrative office) shows a total of 51,860 FFI troops in late November. But 20,000 of these men were stationed along the French-Italian border and had little contact with the bulk of de Lattre's forces fighting in Alsace. See 1ère Armée Française, État-Major, 1er Bureau, "Situation des effectifs de la 1ère Armée Française à la date du 30 novembre 1944," Annexe I, Folder: Situation d'effectifs 1944-1945, Carton 10 P 87, S.H.A.T.

³⁵Benoiton à Allard, le 1 mars 1945, "Note pour le 4em Bureau," Folder: Service de l'Intendance, Carton 10 P 234, S.H.A.T.; de Lattre à Diethelm et Juin, le 7 février 1945, "Ravitaillement d'origine française," p. 3, Folder: Notes relatives aux ravitaillements, août 1944 à juillet 1945, Carton 10 P 219, S.H.A.T.; 1er Corps d'Armée, Direction de l'Intendance, le 31 janvier 1945, "Conditions générales de ravitaillement," Folder: Campagne de France-Allemagne, septembre 1944 - juillet 1945, Carton 10 P 299, S.H.A.T.; de Lattre, La Première Armée, pp. 194-97, 279; Déloupy, C'est nous les Africains!, pp. 144-45; Navard, La libération avec les chars, pp. 179, 181; Ross, Quartermaster Corps: War against Germany, p. 534; 1ère Armée Française, État-Major, 4e Bureau, le 24 octobre 1944, "Fiche," p. 4, Folder: Notes relatives aux ravitaillements, août 1944 à juillet 1945, Carton 10 P 219, S.H.A.T.

³⁶Base 901, pp. 87-90; "4e Bureau de la 1re Armée," p. 78; Benoiton à de Lattre, le 13 avril 1945, "Étude sur l'organisation du Service de l'Intendance, avril 1945," pp. 3-4, Annexe 2, Folder: Service de l'Intendance, Carton 10 P 234, S.H.A.T.

³⁷Base 901, pp. 46, 87-90, 96; "4e Bureau de la 1re Armée," p. 78.

³⁸Base 901, pp. 88-90, 93, 96; de Lattre, La Première Armée, pp. 194-97; de Lattre à Diethelm et Juin, le 11 janvier 1945, "Ravitaillement d'origine française," p. 4, Folder: Service de l'Intendance, Carton 10 P 234, S.H.A.T.; Vernet, l'armée de terre, pp. 36, 38, 74; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 501; Ross, Quartermaster Corps: War

against Germany, p. 643; Joubert, La libération, pp. 171-72; Delta Base Section, p. 88; de Gaulle, Salvation, pp. 2-3, 34-35; Vigneras, Rearming the French, pp. 325-26.

³⁹Base 901, p. 97; Benoiton à de Lattre, le 7 mars 1945, "Différences en plus et en moins entre nos prévisions et les réceptions de la Régulatrice, pendant le mois de février 1945," Folder: Service de l'Intendance, Carton 10 P 234, S.H.A.T.; 1ère Armée Française, État-Major, 4e Bureau, "Rapports hebdomadaires, 4 février 1945 - 3 mars 1945," Carton 10 P 217, S.H.A.T.

Chapter Four

¹ De Lattre, The First Army, pp. 181-209.

²*Ibid.*, pp. 157-58.

³U.S. Army, "Supply and Maintenance," General Board Report 130, p. 49; U.S. Seventh Army, Report of Operations, vol. 1: pp. 324-25, vol. 2: p. 360, 544; 1ère Armée Française, État-Major, 4e Bureau, le 7 octobre 1944, "Note de service," Folder: Notes relatives aux c.r. [comptes rendus] hebdomadaires, Carton 10 P 217, S.H.A.T.; Base 901, p. 99; "Le Génie de 1942 à 1945," Revue historique de l'armée, numéro 4 (1955), pp. 101-02; "Comments on Ordnance in the French Forces by U.S. Personnel," pp. 34, 41, 46, Record Group 332, National Archives.

⁴De Lattre, The First Army, pp. 224-28; Base 901, pp. 100, 105; Allard, "Le ravitaillement en munitions," Conférence faite le 27 avril 1947, annex 4; 1ère Armée Française, État-Major, 4e Bureau, "Weekly G-4 Periodic Report, November 5-11, 1945," Carton 10 P 217, S.H.A.T. At the French Army archives at Vincennes, the G-4 report for November 5-11 and the one following are written in English; but starting November 19-25, the language changes to French and the weekly G-4 periodic reports are called rapports hebdomadaires.

⁵Eudora R. Richardson and Sherman Allan, Quartermaster Supply in the European Theater of Operations in World War II, vol. 9: Services to Dependent Groups (Camp Lee, Virginia: The Quartermaster School, 1950), pp. 56-57; de Gaulle, Salvation, pp. 34-37; de Gaulle, Unity, pp. 285,

288-89; Navard, La libération avec les chars, pp. 69, 86, 207; Ross, Quartermaster Corps: War against Germany, pp. 208, 210; Déloupy, C'est nous les Africains!, pp. 110, 117-18; Gaujac, Du Rhin au Danube, pp. 140-41; de Lattre, The First Army, p. 173; Vigneras, Rearming the French, pp. 330-31; de Lattre à Diethelm et Juin, le 11 janvier 1945, "Ravitaillement d'origine française," p. 4, 10 P 234, S.H.A.T.

⁶De Lattre, La Première Armée, pp. 194-97; Général Brygoo, "Les Transmissions au C.E.F. et à la 1^{re} Armée Française," Revue historique de l'armée, numéro 1 (1967), p. 107; Ross, Quartermaster Corps: War against Germany, p. 122; Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, pp. 15-16; Base 901, p. 44.

⁷De Lattre, La Première Armée, pp. 194-97; Gaujac, Du Rhin au Danube, p. 148; Lyautey, La campagne de France, p. 157; Navard, La libération avec les chars, p. 199; de Gaulle, Libération, pp. 34-37. The quote concerning the light arms of the FFI comes from the journal of the 2nd Regiment of Algerian Reconnaissance Spahis as found in Gaujac, Du Rhin au Danube, 140-41. Since the FFI used some German weapons, the Seventh Army sent captured enemy arms and ammunition to the First Army by way of CONAD. U.S. Seventh Army, Report of Operations, vol. 2: p. 554; Devers interview by Burg, July 2, 1975, pp. 171-72.

⁸Lyautey, La campagne de France, pp. 84-85.

⁹De Lattre à Diethelm, le 9 novembre 1944, Reconquérir 1944-1945, p. 74; Ross, Quartermaster Corps: War against Germany, pp. 122, 204-05; Risch, Quartermaster Corps: Organization, pp. 106-08.

¹⁰Gaujac, Du Rhin au Danube, p. 63; Ministère des Armées, État-Major de l'Armée de Terre, Service Historique, Campagnes de France et d'Allemagne (1944-1945), Guerre 1939-1945, les grandes unités françaises, historiques succincts, tome V, 1^{ère} partie, sous la direction du colonel Pierre Le Goyet, chef de la section "Études" (Paris: Imprimerie Nationale, 1972) p. 179; Le Service de Santé, pp. 115-16; Médecin Capitaine Verrier, Médecin Chef du 3^e RSAR [Régiment de Spahis Algériennes de Reconnaissance] à Colonel Commandant le 3^e RSAR, le 9 novembre 1944, Carton 11 P 88, S.H.A.T.; Déloupy, C'est nous les Africains!, pp. 131-33; Duprey, L'Ambulance Hadfield-Spears, p. 165; Lyautey, La campagne de France, pp. 120-21, 163.

¹¹Diethelm à de Lattre, le 12 mars 1945, "Habillement des blessés," Folder: Habillement 1944-1945, Carton 10 P 219, S.H.A.T.; 3ème Division d'Infanterie Algerienne, Direction du Service de Santé, le 25 octobre 1944, "Pillage des blessés," Carton 11 P 88, S.H.A.T.; Médecin-Général Guirriec, Directeur du Service de Santé de la 1ère Armée, le 12 novembre 1944, "Fiche pour le 4e Bureau," Folder: Habillement 1944-1945, Carton 10 P 219, S.H.A.T.

¹²De Lattre, The First Army, p. 225.

¹³*Ibid.*, pp. 213-28.

¹⁴Lieutenant-colonel d'Ornano, La Bataille de Belfort (novembre 1944) (Paris: AIA École Militaire - Paris VII, 1955), p. 171; "Comments on Ordnance in the French Forces by U.S. Personnel," p. 41, Record Group 332, National Archives; de Lattre, The First Army, p. 225.

¹⁵De Lattre, The First Army, pp. 207, 229-55; Cartier, le 19 juin 1945, "Rapport sur Service des Essences," p. 5, 10 P 234, S.H.A.T.

¹⁶De Lattre, The First Army, pp. 261-71. The sources consulted in drawing Map 3 were the following: de Lattre, The First Army, pp. 240-41, 263, 289; Gaujac, Du Rhin au Danube, p. 40; Eisenhower, Crusade, pp. 330-32; Richard Natkiel, Atlas of World War II, text by Robin L. Summer, introd. S. L. Mayer (New York: Bison Books Corp., 1985), p. 180.

¹⁷1ère Division Blindée, Direction du Service de Santé, "Journal de marche et opérations," Carton 11 P 206, S.H.A.T.; Déloupy, C'est nous les Africains!, p. 150; Campagnes de France et d'Allemagne, tome V, 2e partie: pp. 897-99; de Lattre, le 24 novembre 1945, "Ordre Général d'Opérations No. 167," Reconquérir, p. 111; Navard, La libération avec les chars, pp. 180-92.

¹⁸De Lattre, The First Army, pp. 271-84.

¹⁹De Lattre, The First Army, pp. 281, 285-86; Eisenhower, Crusade, pp. 331-32; Eisenhower to Marshall, November 27, 1944, The War Years, vol. 4: p. 2320; Eisenhower to Marshall, January 12, 1945, The War Years, vol. 4: p. 2425.

²⁰De Lattre, The First Army, pp. 285-333. See the fine maps in de Lattre's book on pages 289, 319, 327.

²¹U.S. Seventh Army, Report of Operations, vol. 2: pp. 507-09, 579; Lyautey, La campagne de France, p. 231; Mayo, On Beachhead and Battlefront, p. 332.

²²De Lattre à Diethelm et Juin, le 11 janvier 1945, "Ravitaillement d'origine française," 10 P 234, S.H.A.T.; 1ère Armée Française, État-Major, Section Py, le 6 janvier 1945, "Extraits de rapports sur le moral des unités de la 1ère Armée Française, concernant l'alimentation de la troupe," Folder: Service de l'Intendance, Carton 10 P 234, S.H.A.T. A few of the comments of the troops, as found in the January 6th report, are offered here. II Corps Artillery: "No improvement in the delivery of food; on the contrary, deliveries have less and less variety, corned beef and meat and beans everyday, no dessert and insufficient fat products [matières grasses]." Base 901: "The food, judged insufficient in quantity and variety, is steadily the object of criticism." 9th Colonial Infantry Division: "In order to rejuvenate the young recruits physically, it is advisable to allocate a more substantial diet and to authorize more purchases to be made on the spot. This is essential." Signal Company 71/84 (9th DIC): "The creativity in the composition of the rations provokes unfavorable comment. Without a doubt the composition of the rations has changed a lot since the operations at Toulon, and the present ration is judged severely with regard to both its quantity and quality. The lack of salt has been bitterly criticized. The absence of fats has also had a harmful effect on the quality of the dishes offered the troops. The condition of the local market does not permit any relief for this state of affairs."

²³De Lattre à Diethelm et Juin, le 7 février 1945, "Ravitaillement d'origine française," 10 P 219, S.H.A.T.

²⁴1ère Armée Française, État-Major, 4e Bureau, le 8 février 1945, "Fiche sur le ravitaillement intendance," Folder: Notes relatives aux ravitaillements, août 1944 - juillet 1945, Carton 10 P 219, S.H.A.T.; 1ère Armée Française, État-Major, Section Py, le 6 janvier 1945, "Extraits de rapports sur le moral," 10 P 234, S.H.A.T.; 1er Corps d'Armée, Direction de l'Intendance, le 31 janvier 1945, "Conditions générales de ravitaillement," 10 P 299, S.H.A.T.; de Lattre à Diethelm et Juin, le 11 janvier 1945, "Ravitaillement d'origine française," 10 P 234, S.H.A.T.; de Lattre, La

Première Armée, p. 253; Déloupy, C'est nous les Africains!, pp. 144-45; Navard, La libération avec les chars, pp. 179, 181.

²⁵Eisenhower, Crusade, pp. 333-34; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 316-25; de Lattre, La Première Armée, pp. 337, 463-64; Vigneras, Rearming the French, pp. 337, 351-52.

²⁶Campagnes de France et d'Allemagne, tome V, 1re partie: pp. 267, 325, 341; Ministère de la Défense, État-Major de l'Armée de Terre, Service Historique, La participation des Forces Françaises de l'Intérieur aux opérations des fronts de l'Atlantique et des Alpes et à la réorganisation de l'armée (1944-1945), Guerre 1939-1945, les grandes unités françaises, historiques succincts, tome VI, sous la direction du colonel Roger Michalon, chef de la section "Études" (Paris: Imprimerie Nationale, 1980) p. 355; Gaujac, Du Rhin au Danube, pp. 142-153; Vernet, l'armée de terre, p. 73; Eisenhower, Crusade, p. 319; Duprey, L'Ambulance Hadfield-Spears, pp. 156, 166-67; Lyautey, La campagne de France, p. 215; de Gaulle, Salvation, pp. 36-37; de Lattre, The First Army, pp. 177-80, 405; Général Émile Béthouart, Cinq années d'espérance, mémoires de Guerre 1939-1945 (Paris: Plon, 1968), p. 303.

²⁷De Lattre, La Première Armée, pp. 336-37; de Lattre à Diethelm et Juin, le 11 janvier 1945, "Ravitaillement d'origine française," p. 4, 10 P 234, S.H.A.T.; de Gaulle, Salvation, pp. 3, 159-62; Lyautey, La campagne de France, pp. 81, 166, 188; U.S. Seventh Army, Report of Operations, vol. 2: p. 541.

²⁸De Lattre, La Première Armée, pp. 331, 339; Lyautey, La campagne de France, pp. 146, 155, 177, 179; Base 901, pp. 100, 105; de Lattre à de Gaulle, le 18 décembre 1944, Reconquérir, pp. 133-34; Mayo, On Beachhead and Battlefield, pp. 185-86; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 255, 273-75. In his memoirs General de Lattre wrote that the Army's stock of 105-mm howitzer fell to just 400 shells on December 15. General Béthouart repeated this figure in his book. Yet the First Army's Weekly G-4 Periodic Report for December 10-16 shows 23,577 rounds of 105-mm howitzer M2 and 14,165 rounds of 105-mm howitzer M3 on hand one day later on December 16. Four explanations are possible for this discrepancy: (1) de Lattre's figure of 400 is incorrect, (2) the supply report's figures are incorrect, (3) the stock of 105 rose very dramatically between the 15th and 16th, (4) ammunition which was on hand but

earmarked for use by a military unit was not counted by de Lattre. The fourth possibility is suggested by Colonel James L. Whelchel, Chief Quartermaster of CONAD, who noted this French system of inventory in his field of supply. See Ross, Quartermaster Corps: War against Germany, p. 121; Béthouart, Cinq années d'espérance, p. 307; 1ère Armée Française, État-Major, 4e Bureau, "Rapport hebdomadaire, 10-16 décembre 1944," Carton 10 P 217, S.H.A.T.

²⁹Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 246, 260, 268-69; Mayo, On Beachhead and Battlefront, p. 217; Bradley, A Soldier's Story, pp. 306-07; Thompson, The Signal Corps: the Outcome, pp. 362-63, 372; Millett, Army Service Forces, pp. 226-233; Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, pp. 15-16; Lyautey, La campagne de France, p. 100.

³⁰Navard, La libération avec les chars, pp. 221-25; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 257; "Comments on Ordnance in the French Forces," p. 37, Record Group 332, National Archives; Eisenhower, Crusade, pp. 330-33; Lyautey, La campagne de France, p. 132; U.S. Seventh Army, Report of Operations, vol. 2: p. 459.

³¹Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 247-75, 442; U.S. Seventh Army, Report of Operations, vol. 3: pp. 878-79; Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, p. 13; Lyautey, La campagne de France, p. 165.

³²De Lattre, La Première Armée, p. 426.

³³*Ibid.*, pp. 426, 441; Allard, "Le ravitaillement en munitions," Conférence faite le 27 avril 1947, p. 24.

³⁴Guillaume à Monsabert, le 11 janvier 1945, "Situation de la 3ème DIA," Folder: Véhicules-matériel, Carton 10 P 339, S.H.A.T.

³⁵Vignerat, Rearming the French, pp. 174, 189-90, 238; CONAD Compendium, vol. 2: p. 820; U.S. Seventh Army, Report of Operations, vol. 1: p. 67; Ross, Quartermaster Corps: War against Germany, pp. 204-05; Leyer à Eisenhower, le 28 janvier 1945, "Situation en matériel des unités françaises engagées," pp. 1, 4, Folder: Exécution du Plan de Réarmement du 30 Novembre 1944, notes et instructions, janvier 1945, Carton 10 P 218,

S.H.A.T.; Gaujac, De la Provence à l'Alsace, p. 62; Le Troadec, "Le Service du Matériel," p. 106.

³⁶Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, pp. 15-16; "Comments on Ordnance in the French Forces by U.S. Personnel," p. 49, Record Group 332, National Archives; U.S. Seventh Army, Report of Operations, vol. 2: p. 553; Navard, La libération avec les chars, p. 244; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 144-46; Mayo, On Beachhead and Battlefront, pp. 190, 217, 291; Base 901, pp. 53-54; Déloupy, C'est nous les Africains!, p. 188. See also endnote 34 for chapter two.

³⁷"Comments on Ordnance in the French Forces by U.S. Personnel," p. 49, Record Group 332, National Archives; Logistical History of NATOUSA - MTOUSA, pp. 260-62; 2e Corps d'Armée, État-Major, 4e Bureau, le 30 décembre 1944, "Compte-rendu [d']une réunion des directeurs du Service du Matériel des divisions, des commandants des bataillons de réparation et des officiers de liaison de c.a. [corps d'armée] [qui] a eu lieu le vendredi 29.12.44 à la Direction du Service du Matériel de l'Armée," Carton 10 P 349, S.H.A.T.; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 144-45.

³⁸Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, pp. 15-16; "Comments on Ordnance in the French Forces by U.S. Personnel," pp. 30-31, Record Group 332, National Archives; Mayo, On Beachhead and Battlefront, p. 290; Leyer à Eisenhower, le 28 janvier 1945, "Situation en matériel," 10 P 218, S.H.A.T.; 1ère Armée Française, État-Major, 4e Bureau, "Rapport hebdomadaire, 14-20 janvier 1945," Carton 10 P 217, S.H.A.T.; Monsabert à de Lattre, 11 janvier 1945, Folder: Véhicules-matériel, Carton 10 P 339, S.H.A.T.

³⁹Logistical History of NATOUSA - MTOUSA, pp. 265-66, 269; Kleber, Chemicals in Combat, p. 182; 1ère Armée Française, État-Major, 4e Bureau, "Rapport hebdomadaire, 10-16 décembre 1944," Carton 10 P 217, S.H.A.T.; Le Troadec, "Le Service du Matériel," pp. 109-10; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 145, 236, 454, 488-89; Leyer à Eisenhower, le 28 janvier 1945, "Situation en matériel," 10 P 218, S.H.A.T.; Mayo, On Beachhead and Battlefront, pp. 283.

⁴⁰Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 242-43; Vignerat, Rearming the French, pp. 189-90; Granier à de Lattre, 25 décembre 1944 (date d'arrivée à la 1^{re} Armée Française), 11 P 260, S.H.A.T.; Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, pp. 15-16; 9^{ème} Division d'Infanterie Coloniale, Direction du Service du Matériel, le 26 mai 1945, "Enseignements tirés sur le fonctionnement du Service du Matériel durant la campagne 1944-1945," 11 P 162, S.H.A.T.; Ross, Quartermaster Corps: War against Germany, p. 233; Mayo, On Beachhead and Battlefront, p. 143.

⁴¹1^{ère} Armée Française, État-Major, 4^e Bureau, "Rapports hebdomadaires, 5 novembre 1944 - 5 mai 1945," Carton 10 P 217, S.H.A.T.; 1^{ère} Division Blindée, Commandement des Transmissions, le 28 octobre 1944, "Enseignements à tirer de la campagne de France, octobre 1944," Carton 11 P 206, S.H.A.T.; Navard, La libération avec les chars, pp. 165-66.

⁴²1^{ère} Armée Française, État-Major, 4^e Bureau, "Rapports hebdomadaires, 5 novembre 1944 - 5 mai 1945," 10 P 217, S.H.A.T.; CONAD History, p. 122; Paul Gaujac, L'armée de la victoire, vol. 2: De Naples à l'île d'Elbe 1943-44 (Paris: Charles-Lavauzelle, 1985), p. 27. Another example is presented here of the great care which the historian must use in handling figures. In volume two of his work, Logistical Support of the Armies, Ruppenthal wrote: "In November [the U.S.] First Army reported 4,700 miles [of field wire] on hand, which it calculated was sufficient for only one and one-half days of large-scale operations, and reported shortages of between 10,000 and 17,000 miles. By contrast, Seventh Army listed normal requirements of only 250 miles per day, which were being met to the extent of only 30 miles." Ruppenthal did not explain this tremendous difference in daily field wire needs--3,130 miles versus 250 miles--and there is little wonder why since it did not exist. That fine historian misread the source from which he took his information, the Seventh Army's Report of Operations which states: "Strict rationing of field wire needed by combat units to maintain communications created some difficulty. The ordinary requirement of 250 miles of wire per day for each division [my emphasis] had to be satisfied by a quota of less than 30 miles per day." See Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 215-16; U.S. Seventh Army, Report of Operations, vol. 3: 877-78.

⁴³1^{ère} Armée Française, État-Major, 4^e Bureau, "Rapport hebdomadaire, 12-18 novembre 1944," 10 P 217, S.H.A.T.

⁴⁴Gaujac, Du Rhin au Danube, pp. 67-73, 138-39; Navard, La libération avec les chars, p. 217; U.S. Seventh Army, Report of Operations, vol. 2: p. 627; Mayo, On Beachhead and Battlefront, p. 303; Lyautey, La campagne de France, p. 146. During the fighting around the Colmar pocket, the French 2nd Armored Division, commanded by Major General Jacques Leclerc, was assigned to de Lattre's First Army. Previously, this unit had been attached to the U.S. Third and Seventh Armies. Leclerc strongly disapproved of de Lattre's tank tactics and the dramatic, showy style of his bulletins, which earned him the nickname: General de Lattre de Théâtre. In December Leclerc asked General Devers to return him to the U.S. Seventh Army. Like the U.S. units temporarily assigned to the First Army in operations against the Colmar pocket, the French 2nd Armored Division continued to draw supplies from Seventh Army depots. For some of Leclerc's unflattering comments about de Lattre, see Gaujac, Du Rhin au Danube, pp. 67-73. See also The War Years, vol. 4: p. 2362; de Gaulle, Unity, pp. 299-300; "World Battlefronts," Time, vol. XLIV, no. 23 (December 4, 1944), p. 27; de Lattre, The First Army, pp. 342, 367.

⁴⁵Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 241-42, 456-58; Navard, La libération avec les chars, pp. 56, 243.

⁴⁶Leyer à Eisenhower, le 28 janvier 1945, "Situation en matériel," pp. 5-6, 10 P 218, S.H.A.T.; de Lattre à Devers, le 30 janvier 1945, Folder: Notes relatives aux ravitaillements, août 1944 à juillet 1945, Carton 10 P 219, S.H.A.T.; de Lattre à Devers, le 15 février 1945, Reconquérir, p. 188; 1ère Armée Française, État-Major, 4e Bureau, "Rapport hebdomadaire, 21-27 janvier 1945," Carton 10 P 217, S.H.A.T.

⁴⁷Allard, "Le ravitaillement en munitions," Conférence faite le 27 avril 1947, p. 14; Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, p. 17; 1ère Armée Française, Direction du Service du Matériel, "Instruction sur le fonctionnement du ravitaillement en munitions," pp. 9-10, 10 P 234, S.H.A.T.; de Lattre, The First Army, pp. 344-45; Béthouart, Cinq années d'espérance, pp. 310-11.

⁴⁸Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, pp. 17-18. See the chart at the end of Allard's conference on Colmar titled: "Utilisation des groupes de transport de réserve générale."

⁴⁹*Ibid.*, p. 18.

⁵⁰*ibid.*, p. 18.

⁵¹*ibid.*, pp. 18-19; Allard, "Le ravitaillement en munitions," Conférence faite le 27 avril 1947, p. 14.

⁵²*ibid.* It should be noted that my account of the calculations made by Colonel Allard differs slightly from that given by Allard himself in his conferences on Colmar and ammunition. The variation is due to the fact that Allard's figures do not literally add up. He stated that six days, not five as I have written, were needed to move the required ammunition, and that consequently the I Corps' attack could begin on January 19. Yet if transportation activities were to begin on the morning of the 14th, as he asserted, then the sixth twenty-four hour period would end on the 20th not the 19th. My inability to reconcile these two points almost caused me to omit Allard's otherwise illuminating account of the method by which he arrived at the answer to General Valluy's question. I have chosen instead to "tamper with" or "interpret" the information given by Allard in order to remove the seeming contradiction. Besides the interpretation given in the text, the only other explanation which would make sense of Allard's figures would be the possibility that he calculated preparations to be completed at the end of the first day of attack and not before.

⁵³Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, pp. 13, 24; Allard, "Le ravitaillement en munitions," Conférence faite le 26 février 1946, p. 15.

⁵⁴1ère Armée Française, État-Major, 4e Bureau, "Rapports hebdomadaires, 14-27 janvier 1945," Carton 10 P 217, S.H.A.T.; Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, pp. 21-22. The gasoline shortage offers another case where figures seem to be in contradiction. Allard wrote that the Daily Supply Situation Report for January 13 showed a stock of six days of supply; on the other hand, the Weekly G-4 Periodic Report for January 14-20 stated that only 3.6 days of supply were available on that date.

⁵⁵Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, p. 22; CONAD History, p. 145; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 158-59.

⁵⁶1ère Armée Française, État-Major, 4e Bureau, "Rapport hebdomadaire, 14-20 janvier 1945," Carton 10 P 217, S.H.A.T.; U.S. Seventh Army, Report of Operations, vol. 2: pp. 538-39, vol. 3: p. 876.

⁵⁷1ère Armée Française, État-Major, 4e Bureau, "Rapport hebdomadaire, 14-20 janvier 1945," 10 P 217, S.H.A.T.

⁵⁸Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 179, 275, 349; Bradley, A Soldier's Story, pp. 406, 431-32; Kennett, G.I., p. 97. The quote from the U.S. First Army is found in Ruppenthal.

⁵⁹CONAD History, p. 147; Gaujac, Du Rhin au Danube, p. 103; de Lattre, The First Army, p. 337; Ross, Quartermaster Corps: War against Germany, p. 534; see also endnote 28 for chapter two.

⁶⁰De Lattre, The First Army, pp. 339-40. For drawing Map 4 the following works were used: the map entitled "Bataille de Colmar Jan 20th - Feb 9th 1945" found between pages 524-25 of de Lattre's The First Army; Gaujac, Du Rhin au Danube, p. 79; Eisenhower, Crusade, pp. 354, 364; Natkiel, Atlas, pp. 180, 185.

⁶¹Ibid., pp. 344-65; Navard, La libération avec les chars, pp. 221-25.

⁶²Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, p. 24; Allard, "Le ravitaillement en munitions," Conférence faite le 27 avril 1945, pp. 17, 23-24; "Comments on Ordnance in the French Forces by U.S. Personnel," p. 37, Record Group 332, National Archives; Devers à de Lattre, le 29 janvier 1945, Folder: Notes relatives aux ravitaillements, août 1944 à juillet 1945, Carton 10 P 219, S.H.A.T.

⁶³De Lattre, The First Army, pp. 365-97.

⁶⁴Ibid., pp. 400-01.

Chapter Five

¹Ruppenthal, Logistical Support of the Armies, vol. 2: p. 378; Base 901, pp. 15, 60, 63-64; CONAD History, p. 171; U.S. Army, "Supply and Maintenance," General Board Report 130, p. 60; Philibert, "Base

franco-américaine," pp. 117-18; Granier à de Lattre, le 16 février 1945, Folder: Base Militaire 901 créée en août 1943 à Alger, 16 août 1943 - 31 mars 1946, Carton 11 P 260, S.H.A.T.

²CONAD History, p. 4; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 383; HQ SOLOC, ETOUSA, February 10, 1945, "SOP For Base 901 (French)," Folder: Base Militaire 901 créée en août 1943 à Alger, 16 août 1943 - 31 mars 1946, Carton 11 P 260, S.H.A.T.; Albord à Granier, le 12 février 1945, Folder: Base Militaire 901, conflits d'attributions, décembre 1944 - mars 1945, Carton 11 P 260, S.H.A.T.; Albord à de Lattre, le 12 février 1945, Folder: Base Militaire 901, conflits d'attributions, décembre 1944 - mars 1945, Carton 11 P 260, S.H.A.T.

³Granier, le 5 mars 1945, "Rapport relatif aux incidents qui se sont produits à la Base 901, du débarquement au 1 mars 1945," Folder: Base Militaire 901, conflits d'attributions, décembre 1944 - mars 1945, Carton 11 P 260, S.H.A.T.; Granier, le 5 mars 1945, "Interventions du colonel Albord pour obtenir un commandement indépendant ou remplacer le général Granier à la Base 901 (pour ne citer que les plus essentielles)," Folder: Base Militaire 901, conflits d'attributions, décembre 1944 - mars 1945, Carton 11 P 260, S.H.A.T.; Granier à Albord, le 15 février 1945, Folder: Base Militaire 901 créée en août 1943 à Alger, 16 août 1943 - 31 mars 1946, Carton 11 P 260, S.H.A.T.

⁴Wilson à de Lattre, "Intégration de la Base 901 (Française) avec CONAD," Folder: Base Militaire 901 créée en août 1943 à Alger, 16 août 1943 - 31 mars 1946, Carton 11 P 260, S.H.A.T.; Base 901, pp. 59-60, 63-64; 1ère Armée Française, État-Major, 4e Bureau, "Commandement de la Base 901," Folder: Base Militaire 901, conflits d'attributions, décembre 1944 - mars 1945, Carton 11 P 260, S.H.A.T.; Vignerat, Rearming the French, pp. 357-58.

⁵Granier, le 5 mars 1945, "Rapport relatif aux incidents à la Base 901," 11 P 260, S.H.A.T.; Granier, le 5 mars 1945, "Interventions du colonel Albord," 11 P 260, S.H.A.T.

⁶Wilson à de Lattre, "Intégration de la Base 901," 11 P 260, S.H.A.T.; Wilson à Larkin, "Organisation du ravitaillement de la 1ère Armée Française," Folder: Notes, messages concernant le ravitaillement, les mouvements, les limites de zones, 1945, Carton 10 P 221, S.H.A.T.; Base

901, pp. 59-60. Wilson claimed not only interference from Granier but SOLOC as well, see Ruppenthal, Logistical Support of the Armies, vol. 2: p. 44.

⁷Granier à Wilson, le 7 mars 1945, Folder: Base Militaire 901 créée en août 1943 à Alger, 16 août 1943 - 31 mars 1946, Carton 11 P 260, S.H.A.T.; Granier à de Lattre, le 7 mars 1945, Folder: Base Militaire 901, conflits d'attributions, décembre 1944 - mars 1945, Carton 11 P 260, S.H.A.T.; Base 901, pp. 59-60; Eisenhower, Crusade, pp. 362-63, 413-14; Eisenhower to Marshall, February 20, 1945, The War Years, vol. 4: p. 2491. Granier wrote his March 7th letter to Wilson as a rebuttal to criticism made by the commander of CONAD in his letter to de Lattre, cited in endnote 6. The tone of Granier's message was one of polite disagreement. He concluded it as follows: "I will therefore resign my command of Base 901 without bitterness; this difference of opinion on a matter of principle does not affect my feelings of friendship which I have for you on a personal level. I ask you, my General, to accept the expression of my respectful deference." The several reports and letters written by Granier concerning his resignation or dismissal suggest that he was anxious to defend his actions.

⁸CONAD History, p. 163; de Lattre, le 23 février 1945, "Instruction personnelle et secrète numéro 9," Reconquérir, pp. 190-91.

⁹1ère Armée Française, État-Major, 4e Bureau, "Rapport hebdomadaire, 4-10 février 1945, Carton 10 P 217, S.H.A.T.; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 158; Base 901, p. 57; de Lattre à de Gaulle, le 1 avril 1945, Reconquérir, p. 213.

¹⁰Base 901, p. 97; Benoiton à de Lattre, le 7 mars 1945, "Différences entre nos prévisions et les réceptions pendant février," 10 P 234, S.H.A.T.; Benoiton à de Lattre, 18 mars 1945, "État comparatif des fixations et réceptions par la R.C. N° 1 des vivres français pour la période du 1 au 10 mars 1945," Carton 10 P 234, S.H.A.T. The chart on page 97 of Base 901 seems at first glance to indicate a notable improvement in the supplies sent by Regulating Station 1 during March and April. Yet it should be noted that the tonnage figures for these two months show the amount delivered in ten-day periods and not seven as in previous months.

¹¹1ère Armée Française, État-Major, 4e Bureau, "Rapports hebdomadaires, 4 février 1945 - 5 mai 1945," Carton 10 P 217, S.H.A.T.

¹²1ère Armée Française, État-Major, 4e Bureau, "Rapports hebdomadaires, 5 novembre 1944 - 28 avril 1945," Carton 10 P 217, S.H.A.T.; Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, p. 15; Leyer à Eisenhower, le 28 janvier 1945, "Situation en matériel," 10 P 218, S.H.A.T.; Le Troadec, "Le Service du Matériel," pp. 109-10.

¹³De Lattre à Devers, 15 février 1945, Reconquérir, p. 188.

¹⁴Navard, La libération avec les chars, p. 275.

¹⁵1ère Armée Française, État-Major, 4e Bureau, "Rapport hebdomadaire, 22-28 avril 1945," Carton 10 P 217, S.H.A.T.; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 457-58; Mayo, On Beachhead and Battlefront, pp. 306, 332, 336.

¹⁶De Lattre à Devers, 15 février 1945, Reconquérir, p. 188; Allard, "Bataille de Colmar," Conférence faite le 26 février 1946, p. 15; Leyer à Eisenhower, le 28 janvier 1945, "Situation en matériel," 10 P 218, S.H.A.T.

¹⁷Ross, Quartermaster Corps: War against Germany, pp. 233, 721; Mayo, On Beachhead and Battlefront, p. 143; "Comments on Ordnance in the French Forces by U.S. Personnel," p. 31, Record Group 332, National Archives; 9ème Division d'Infanterie Coloniale, Direction du Service du Matériel, le 26 mai 1945, "Enseignements tirés sur la campagne 1944-1945," 11 P 162, S.H.A.T.; Armée B, État-Major, "Instruction sur l'organisation et fonctionnement du Service du Matériel," p. 7, Folder: Service du Matériel, Carton 10 P 234, S.H.A.T. The last document cited was probably written in the summer 1944. These instructions from headquarters forbade the cannibalization of unserviceable matériel and urged its evacuation to the proper echelon. Since these orders were not strictly followed, it is not surprising that these same orders issued later in early 1945 were again frequently ignored.

¹⁸Le Troadec, "Le Service du Matériel," p. 110; "Comments on Ordnance in the French Forces by U.S. Personnel," pp. 36, 51, Record Group 332, National Archives; 2e Corps d'Armée, État-Major, 4e Bureau, le 30 décembre 1944, "Compte-rendu [d']une réunion [qui] a eu lieu le vendredi 29.12.44," 10 P 349, S.H.A.T. The statement that the First Army lacked approximately 5,000 ordnance troops was calculated as follows: According to Chart 1 on page 22, ordnance personnel in the army in support

of each U.S. division numbered about 1,500 men. Multiplying this figure by nine divisions, one obtains a total of 13,500 ordnance troops, and comparing this number with that of the First Army (8,400) shows a deficit of about 5,000 men. The only problem in these calculations is determining the number of divisions supported by the ordnance troops of the First Army. In March 1945 the 27th Alpine and the 1st Free French, sometimes called the 1st DMI, were detached from de Lattre's command. But it is assumed that some of the 8,400 ordnance personnel continued to support the two divisions in the final weeks of the war. One could also argue that the shortage was even greater than 5,000 since the number of American soldiers in ordnance units climbed from 1,500 per division in late 1943 to 1,800 in 1945.

¹⁹De Lattre, The First Army, p. 405; Vignerat, Rearming the French, pp. 349, 353-54; 1ère Armée Française, État-Major, 1er Bureau, Situation des effectifs de la 1ère Armée Française à la date du 31 janvier 1945," annexe 1, Folder: Situation d'effectifs 1944-1945, Carton 10 P 87, S.H.A.T.; de Gaulle, Salvation, p. 184; Salan à de Lattre, le 10 avril 1945, "Demande de chaussures," Folder: Habillement, dotation d'effets, 3/12/44 - 8/6/44, Carton 10 P 219, S.H.A.T. See also endnote 34 for chapter three and endnote 5 for chapter four.

²⁰Gaujac, Du Rhin au Danube, pp. 160-61; de Gaulle, Salvation, pp. 34-35; "Comments on Ordnance in the French Forces by U.S. Personnel," p. 47, Record Group 332, National Archives; de Lattre, The First Army, p. 459.

²¹Gaujac, Du Rhin au Danube, pp. 148, 152-53; de Lattre, The First Army, pp. 173-74, 178, 405; CONAD History, p. 194; Vignerat, Rearming the French, pp. 339-44. Like several details surrounding the FFI, it is not clear from the sources cited above whether twelve or twenty-four light battalions were formed from the FFI of the First Army. Vignerat wrote that in early April twenty-four security battalions were at the disposal of the Sixth Army Group, of which twelve were stationed in the First Army's zone. He stated also that there was considerable confusion regarding which FFI battalions were intended for combat operations and which for rear guard duties. In early April, General Devers reported that the twenty-four security battalions in his area had "gotten out of hand" and were being used for combat. A note from the First Army's G-4 dated February 8, 1945 relates that the French attempted to add the twenty-four light battalions and six other battalions to the U.S.-supported Troop List,

which numbered 238,109 men at the end of December. The Americans demurred, however. The G-4 document contains some other noteworthy information. It states that at least in late January the Americans supplied food to as many as 10,000 French soldiers in the First Army who were not on the Troop List. About 7,600 of these belonged to the 10th Infantry Division. This unit was composed of FFI soldiers from the Paris region and was temporarily assigned to the First Army in January and February during the fighting around Colmar. The French may have asked the Americans to help support the 10th since Regulating Station 1 was still struggling to supply the FFI already in the First Army. See 1ère Armée Française, État-Major, 4e Bureau, "Fiche sur le ravitaillement intendance," Folder: Notes relatives aux ravitaillements, août 1944 à juillet 1945, Carton 10 P 219, S.H.A.T. Evidence that the Americans hesitated to supply the battalions with food comes from Diethelm to de Lattre, le 8 mars 1945, Carton 10 P 217, S.H.A.T.; de Lattre to Diethelm, le 22 mars 1945, Carton 10 P 217, S.H.A.T.

²²Eisenhower, Crusade, pp. 64, 225-26; Bradley, A Soldier's Story, pp. 420, 434-35; Eisenhower to the Combined Chiefs of Staff, September 29, 1944, The War Years, vol. 4: p. 2200; Capt. Harry C. Butcher, My Three Years with Eisenhower, (New York: Simon and Schuster, 1946), pp. 513-14; de Lattre, The First Army, p. 409; Forrest C. Pogue, The Supreme Command, United States Army in World War II, The European Theater of Operations, vol. 3, pt. 4 (Washington D.C.: Office of the Chief of Military History, Department of the Army, 1954), pp. 409-14. Although the Siegfried line is not well marked, Map VII ("Drive to the Elbe"), found at the back of Pogue's work, shows the terrain features of Germany.

²³De Lattre, The First Army, pp. 407-09, 413-14; Pogue, The Supreme Command, pp. 412, 414, 425-27; de Gaulle, Salvation pp. 174-75; Eisenhower, Crusade, pp. 373, 383.

²⁴De Lattre, The First Army, pp. 407-09, 420, 422, 429; de Gaulle, Unity, pp. 132, 300; de Gaulle, Salvation, pp. 26-27, 29, 94, 158-59, 174-75, 191-92.

²⁵Eisenhower, Crusade, pp. 382-84, 396, 404-05; Charles B. MacDonald, The Last Offensive, United States Army in World War II, The European Theater of Operations, vol. 3, pt. 9 (Washington D.C.: Office of the Chief of Military History, United States Army, 1973), pp. 236, 321, 335.

²⁶De Lattre, The First Army, pp. 413-414, 420-24; MacDonald, The Last Offensive, pp. 321-22.

²⁷De Lattre, The First Army, pp. 424-29; Juin à de Lattre, 1 avril 1945, Reconquérir, p. 213.

²⁸De Lattre, The First Army, pp. 423, 425, 428; Le général de corps d'armée Dromard, "Le génie au combat: Guerre 1939-1945," Revue historique de l'armée, numéro 1 (1966), pp. 155-57; Base 901, pp. 112-13; "Le Génie de 1942 à 1945," p. 104.

²⁹De Lattre, La Première Armée, p. 541; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 411; Allard, "Le ravitaillement en munitions," Conférence faite le 27 avril 1947, p. 18; "Le Génie de 1942 à 1945," p. 104.

³⁰Juin à de Lattre, le 1 avril 1945, Reconquérir, p. 214; de Lattre, The First Army, pp. 407, 432-33, 450-51.

³¹Dromard, "Le génie au combat," p. 154; Allard, "Le ravitaillement en munitions," Conférence faite le 27 avril 1945, p. 18; 1^{er} Corps d'Armée, État-Major, 4^e Bureau, le 28 mai 1945, "Enseignements à tirer," p. 5, 10 P 216, S.H.A.T.; CONAD History, pp. 188-90.

³²Base 901, pp. 70-71, 76-77; 1^{ère} Armée Française, État-Major, 4^e Bureau, le 30 avril 1945, "Des difficultés de ravitaillement," Folder: Notes relatives aux ravitaillements, août 1944 à juillet 1945, Carton 10 P 219, S.H.A.T.; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 390; 1^{ère} Armée Française, État-Major, 4^e Bureau, "Rapports hebdomadaires 7-13 janvier 1945, 22-28 avril 1945," Carton 10 P 217, S.H.A.T.

³³1^{ère} Armée Française, État-Major, 4^e Bureau, "Rapport hebdomadaire 22-28 avril 1945," 10 P 217, S.H.A.T.

³⁴Headquarters, European Theater of Operations, United States Army to Commanding Generals, Each Army Group, March 8, 1945, "Maintenance of Motor Vehicles," Folder: Quartier Général du Théâtre d'Opérations Européen USA (ETOUSA), notes - messages, 1944-1945, Carton 10 P 221, S.H.A.T.; "Comments on Ordnance in the French Forces," p. 49, Record Group 332, National Archives; 1^{ère} Armée Française, État-Major, 4^e Bureau, "Rapports

hebdomadaires 11-17 mars 1945, 22 avril - 5 mai 1945," Carton 10 P 217, S.H.A.T.

³⁵Base 901, p. 77; 1ère Armée Française, État-Major, 4e Bureau, "Rapports hebdomadaires 11-17 mars 1945, 15 avril - 5 mai 1945, Carton 10 P 217, S.H.A.T.; Bykofsky, Transportation Corps: Operations Overseas, p. 339; Déloupy, C'est nous les Africains!, pp. 219, 222; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 421, 429-30, 453-54; U.S. Seventh Army, Report of Operations, vol. 3: p. 895; 1er Corps d'Armée, État-Major, 4e Bureau, le 28 mai 1945, "Enseignements à tirer," 10 P 216, S.H.A.T.; "Comments on Ordnance in the French Forces," p. 31, Record Group 332, National Archives. Ordnance was not the only service whose work was hampered by constantly having to relocate. Medical troops spent a third of their time moving instead of caring for the wounded; see Hugonot, Le Service de Santé, p. 71.

³⁶"4e Bureau de la 1re Armée," p. 84; Déloupy, C'est nous les Africains!, pp. 217, 221-24; 1er Corps d'Armée, État-Major, 4e Bureau, le 28 mai 1945, "Enseignements à tirer," 10 P 216, S.H.A.T.; Navard, La libération avec les chars, pp. 293, 297, 304, 324, 328.

³⁷CONAD History, pp. 209-10; Campagnes de France et d'Allemagne, tome V, 1ère partie: pp. 383, 387, 415, 459, 471, 491; tome V, 2e partie: pp. 939, 945, 955, 1331, 1411; 1ère Armée Française, État-Major, 4e Bureau, "Rapports hebdomadaires 8 avril - 5 mai, 1945," 10 P 217, S.H.A.T.; Ruppenthal, Logistical Support of the Armies, vol. 2: p. 421; Base 901, p. 77; 1ère Armée Française, État-Major, 4e Bureau, "Utilisation par les unités des véhicules automobiles d'origine allemande confisqués, saisis ou réquisitionnés," Folder: Requisitions, octobre 1944 à juillet 1945, Carton 10 P 220, S.H.A.T.; Déloupy, C'est nous les Africains!, pp. 227-29, 242, 249; 1er Corps d'Armée, État-Major, 4e Bureau, le 28 mai 1945, "Enseignements à tirer," 10 P 216, S.H.A.T.; U.S. Seventh Army, Report of Operations, vol. 3: p. 895.

³⁸Allard, "Le ravitaillement en munitions," Conférence faite le 27 avril 1947, p. 18; Tassigny, La Première Armée, p. 574; Base 901, pp. 77-79; 1ère Armée Française, État-Major, 4e Bureau, "Rapport hebdomadaire 22-28 avril 1945," 10 P 217, S.H.A.T.

³⁹Ibid.; "4e Bureau de la 1re Armée," p. 84; de Lattre à Juin, le 30 avril 1945, Folder: Ravitaillement par avion, Carton 10 P 219, S.H.A.T.; 1ère Armée Française, État-Major, 4e Bureau, le 26 avril 1945, "Ravitaillement du 1er C.A. [Corps d'Armée] par air," Folder: Ravitaillement par avion, Carton 10 P 219, S.H.A.T.; Cartier, le 19 juin 1945, "Rapport sur Service des Essences," pp. 6-7, 10 P 234, S.H.A.T.; Hugonot, Le Service de Santé, p. 73. After the war, de Lattre wrote that planes eventually delivered 3,600 tons daily to the Sixth Army Group, of which the French received one third or 1,200 tons. These figures seem implausibly high. In his Crusade in Europe, Eisenhower stated that on a single day only 2,000 tons of supplies could be airlifted to all forward combat units advancing in Germany. General Board Report 130 corroborates the figure given by Eisenhower, showing 45,825 tons moved by air in April and 3,775 tons during the first eight days of May. See Eisenhower, Crusade in Europe, p. 396; U.S. Army, "Supply and Maintenance," General Board Report 130, p. 104.

⁴⁰De Lattre, La Première Armée, pp. 562, 574; Base 901, pp. 70-71, 77-79; Campagnes de France et d'Allemagne, tome V, 2e partie: pp. 953, 961, 1377, 1379, 1383, 1389; Cartier, le 19 juin 1945, "Rapport sur Service des Essences," pp. 6-7, 10 P 234, S.H.A.T.; Navard, La libération avec les chars, p. 296; CONAD History, p. 213; Bradley, A Soldier's Story, pp. 544-45; Ross, Quartermaster Corps: War against Germany, pp. 433-34.

⁴¹1ère Armée Française, État-Major, 4e Bureau, "Rapports hebdomadaires, 1 avril - 5 mai 1945," 10 P 217, S.H.A.T.; CONAD History, p. 213; 1ère Armée Française, État-Major, 4e Bureau, "Enseignements à tirer," p. 4, 10 P 216, S.H.A.T.; Ruppenthal, Logistical Support of the Armies, vol. 2: pp. 453-54; "Comments on Ordnance in the French Forces by U.S. Personnel," pp. 37, 46-47, Record Group 332, National Archives; U.S. Seventh Army, Report of Operations, vol. 3: pp. 696, 738, 894; Speer, Inside the Third Reich, pp. 530, 538, 563, 569, 596; Eisenhower, Crusade in Europe, pp. 395, 404-05.

⁴²Déloupy, C'est nous les Africains!, p. 233; de Lattre, The First Army, pp. 407, 501.

Conclusion

¹CONAD History, pp. 166, 339; U.S. Seventh Army, Report of Operations, vol. 2: p. 532-33; 1ère Armée Française, État-Major, 4e Bureau, "Fiche sur le ravitaillement intendance," 10 P 219, S.H.A.T.; 1ère Armée Française, État-Major, 4e Bureau, "Rapport hebdomadaire, 4-10 mars 1945," Carton 10 P 217, S.H.A.T. From the charts in CONAD History one can determine that from December 31, 1944 to February 28, 1945, the First Army had on average about 37,300 LT of supplies in its depots. During the same period the Seventh Army had on average roughly 75,000 LT. From the documents obtained at S.H.A.T., the troop strength of the First Army averaged about 202,000 men from December 31 to February 28; this figure excludes all FFI personnel and prisoners of war. CONAD History and the Seventh Army's Report of Operations show the effectives of that Army at approximately 332,500 men for the period under consideration; this number may be a little high since the ration strength of the U.S. Seventh as reported by CONAD could have easily included prisoners of war. The above figures are the basis for the statements made in the text on the quantity of supplies available to each man in the two armies.

²De Gaulle, Salvation, p. 29.

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